

# AMIGA

June 1991

£2.95

## AUI 2.0!

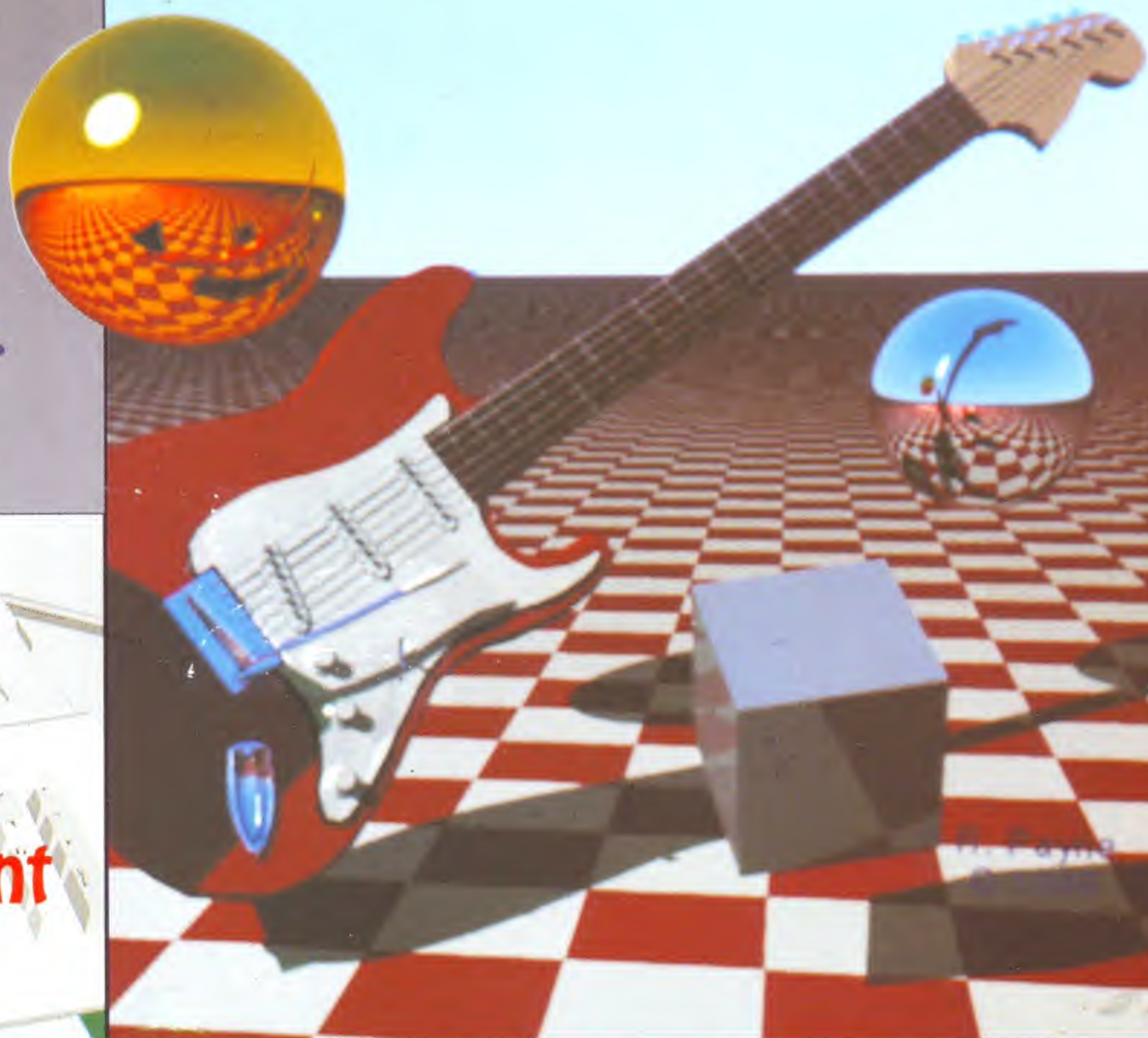
The New, Improved Version  
of the first and still the  
best Amiga Magazine . . .

**This month • Rombo's  
Colour Solution • C.A.'s  
Supercalc • Newtek's  
Video Toaster  
Softwood's PenPal  
Alternative's  
Big Scroller**

**Special Features – Getting  
Started with your Amiga . . .  
Understanding Workbench  
and How to Use a Modem**

# USER

## INTERNATIONAL



**No Userdisk?  
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for one now!**

**The Top Amigames . . .  
Pang, Narc, SuperCars II,  
PGA Golf, and much, much more**

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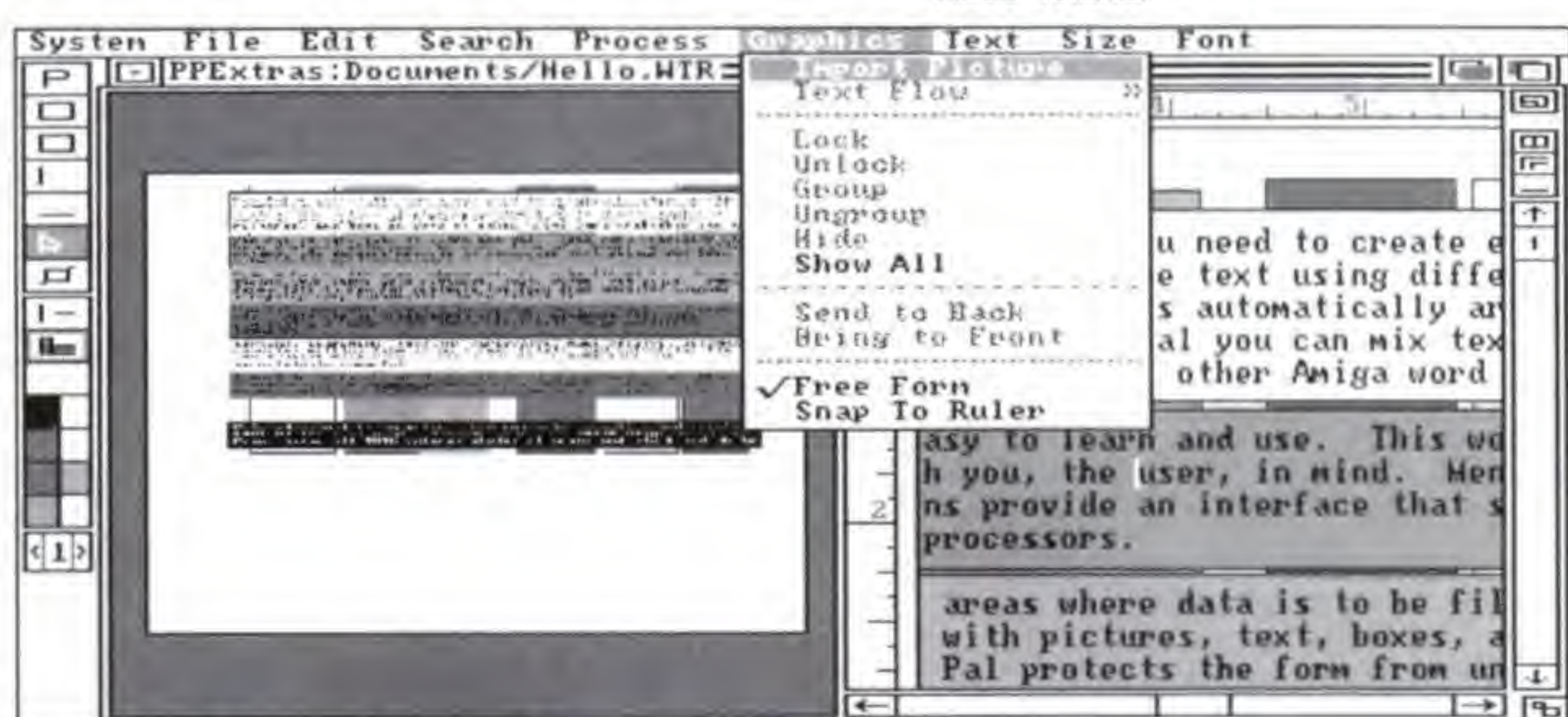
# AMIGA

## USER INTERNATIONAL

JUNE 1991 VOL 5 NO. 6



Video Toaster



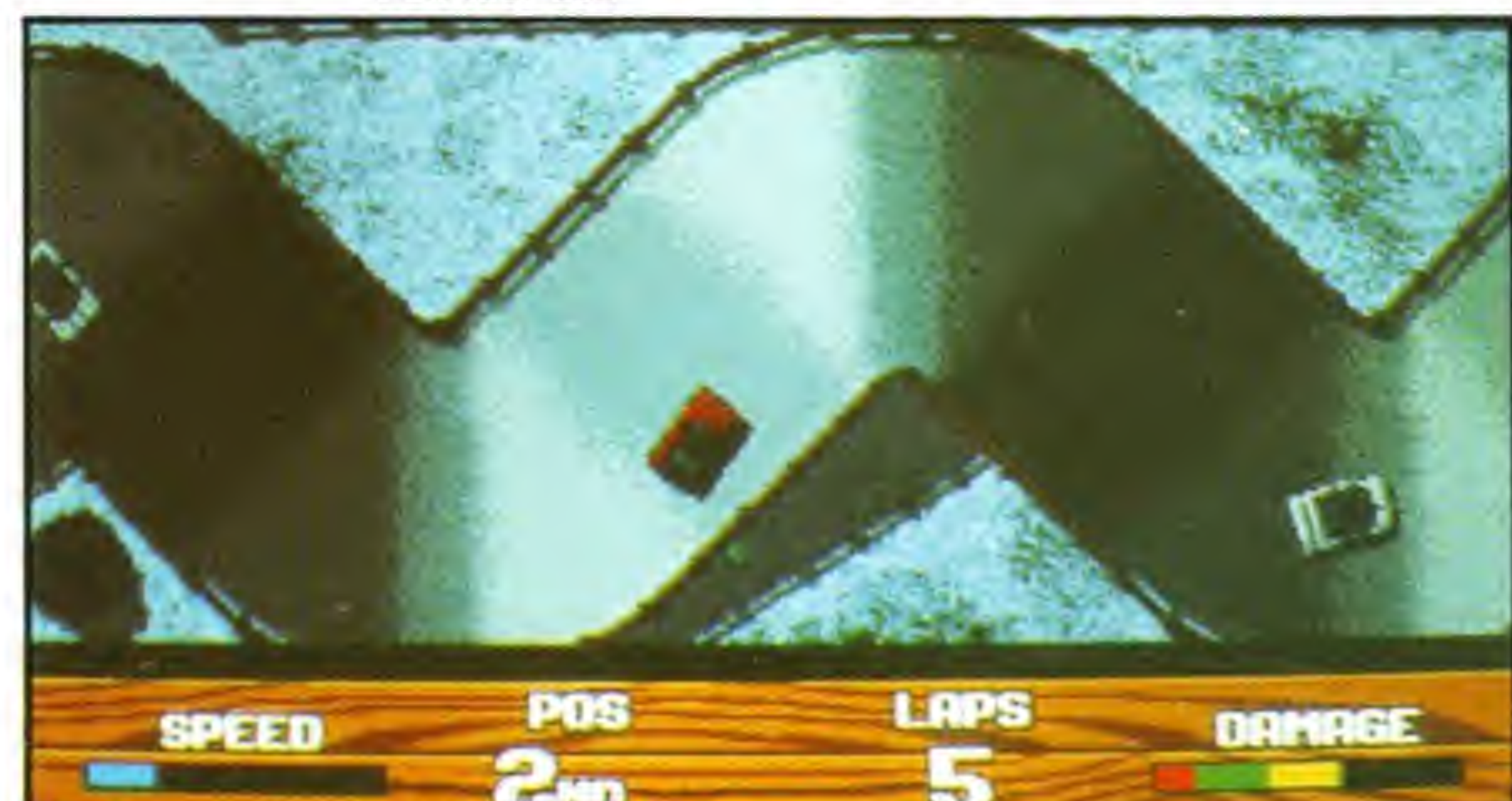
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Workbench



PGA Tour Golf



Supercars II

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Amiga users!

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Workbench.

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the potential Leonardos among AUI's talented readers

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out! (But you can start with every game reviewed in this AUI!)



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## A New AUI Dimension

Dear Amiga User,

Beware of imitations. . . What you are reading is, however, no imitation of **Amiga User International**, it is the real thing – in its 2.0 Version. We hope you like it in its new format. It is after all the longest established UK Amiga magazine. And I hope you will be wary of imitations that make false claims to being "the longest running British Amiga magazine" – whatever that may mean! Most magazine readers don't like changes in publications they are used to. But **AUI** has not changed since it was started some five years ago, which was two years before any other UK Amiga magazine saw the light. So we thought it due for an upgrade. While we have spent considerable time on bringing in the changes, what we have done is not set in stone and we would be happy to hear what you think about the new features both in content and design. We plan, anyway, to make further enhancements later in the year.

One clear improvement is the coverdisk. When we started **AUI**, I wanted to have a coverdisk but wrongly allowed myself to be argued out of it. 3½" disks were in those days expensive so we had on the cover a crib card each month which was very popular too. But the disk is long overdue.

We intend to have coverdisks that really encourage you to use the interactive talents of the Amiga and not simply fill the disk with bits and pieces of largely easily available PD. We will also be providing full 1 Meg disks, as we believe most **AUI** readers have or are about to upgrade.

The Amiga has come a long way since we began supporting it when no-one else in the publishing world and few in the software business were interested. We can claim a happy prescience of which everyone involved with **AUI** can be proud. As an illustration of how right we were, this is a quote from **AUI** of May 1987 – by the way, a year before that "longest running" magazine appeared and some months before the A500 hit the U.K. scene – "My bet is that the A500 will get out in substantial numbers before the software houses, especially games companies, will have really got to grips with the potential of this 16 bit blitter blaster that could really take the games market by storm."

Well, it happened just that way and the Amiga is in another era, far ahead of its competitors and one of the world's most successful computers. Now **AUI** is making a move into a more advanced stage too. We hope you will enjoy its new form and its new dimensions.

Yours sincerely,  
**Antony Jacobson**  
Managing Editor

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# WIN Upgrades for your Amiga!

# Competition

## WIN! WIN! WIN!

**10 x Kickstart V1.3 and Fatter Agnus upgrade chips**  
**20 x Amiga Hardware Reference Manual Revision 2**  
**and All of the games reviewed in this issue!**

To celebrate the all-new **AUI** upgrade in collaboration with Checkmate Digital Systems. We are giving away upgrade chips which will allow you to have the latest in Amiga technology. There's also a chance to win every single game reviewed in this issue. Yes all of them!

If that's not enough, as part of the great offer, if you subscribe to **AUI** before 13th June 1991 you won't have to pay for the Userdisk for a year – see the page opposite for more information.

If you'd like to win Kickstart V1.3 and a Fatter Agnus upgrade kit, then answer the two questions (answers can be found in this issue) and insert the missing number in the last sentence:

Who produces the Video Toaster?

Which new Amiga graphic device will Checkmate be distributing?

The new-improved upgraded **AUI** is available on subscription for only £\_\_\_\_\_ for 12 issues with a disk.

To win one of the twenty Amiga Hardware Reference Manuals from Addison Wesley, worth £25.00 each answer the following question:

Which **AUI** contributor is teaching new Amiga users the basics of the Workbench?

Every one of the games in this issue can be yours, all you have to do is tell us the number of games reviewed in this **AUI** and which received the highest award.

Competition Sponsored by Checkmate Digital Systems Ltd, distributors of CAN DO, HAM E and the A1500.

### Rules

You don't have to enter into all three competitions, only those which apply to the prize, or prizes, you want to win.

The closing date for entries is 30th of June.

Entries can be submitted on this page, a photocopy of this page, or a postcard

**Send your entry to:**  
**Upgrade Competition,**  
**Amiga User International,**  
**Maxwell Specialist Magazines,**  
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# USER

## INTERNATIONAL

**THIS IS YOUR LAST CHANCE TO SUBSCRIBE  
AT THE OLD RATES. DO IT NOW!**



# THE AUI USERDISK

Instructions for using  
the Big Alternative  
Scroller

**T**he Big Alternative Scroller - written by Amiga graphics experts Alternative Image - is a powerful and yet simple-to-use program which can generate multi-coloured static and scrolling messages in a variety of typefaces.

The most obvious use of the Big Alternative Scroller (BAS) is to provide titles to add to your DIY video productions, but other uses - such as animated shop window displays - will soon suggest themselves.

BAS's main feature is its incredible ease of use: You can create your own scrolling messages within minutes of loading it. Even complete Amiga-novices should be able to produce titles that Sir Steven Spielberg would be proud of!

## How to use the BAS

Using the Big Alternative Scroller couldn't be easier. Just switch on your Amiga without anything in the internal drive, and wait for the usual picture of a hand holding a disk to appear. Now slot in your Amiga User International coverdisk and wait. After a few seconds a loading screen will appear, and a short time later the program will have loaded and will present you with the Main Menu screen.

All the operations available from the BAS can be controlled from the function keys, so to demonstrate the point, try pressing Function key 1 (F1). The screen should clear, and a short message will move smoothly upwards. You can control the speed of the scrolling by pressing any of the numeric keys from 1 (slow) through to 9 (fast). Pressing the 0 key will pause the scrolling until you select another speed. When you have seen enough of the scrolling, press the escape key to return to the Main Menu.

To change the words which scroll up the screen to your own requirements, press F3 to enter the Editing mode. You should now see all the text that appeared during the scrolling along with a flashing

*The BIG  
Alternative  
Scroller*

*Once you  
have  
entered  
the words  
of wisdom  
you wish  
to use, you  
can experi-  
ment with  
the many  
fonts*

vertical line (the cursor). Using the arrow keys, you can move the cursor around the screen, adding and deleting text as you go. In this demo version of BAS you are limited to 100 characters, where in the full version, of course, no such limit exists. Once you have entered the words of wisdom you wish to use, you can experiment with the many fonts (typefaces) available. Try holding down either of the shift keys and pressing any of the ten function keys. The text on screen should immediately change to one of the twenty fonts available.

From Editing mode, it is possible to highlight some text by changing its colour. Position the cursor before the words you wish to emphasise and then press F1, F2 or F3. When you are happy with your text, press ESC to return to the Main Menu.

To change the colour of either the text or background, select option F5 from the Main Menu and then choose the item whose colour you want to change. You can control the amount of Red, Green and Blue in the colour by pressing R, G and B. The three digit 'number' which changes as you press R, G or B a hexadecimal (base 16) representation of the colour. Each digit will range from 0 (dark) through to 9 and then from A to F (light). This gives each R, G or B component up to sixteen levels and therefore there are 16 times 16 times 16 = 4096 different colours available for you to choose from. Remember to press ENTER when you finished making

your choice. Note: If you are intending to use a genlock, your background colour should be 000 (black). If it isn't, the text will hide the image.

By pressing F6 from the Main Menu, you can alter the position of the drop shadow under your text. Use the arrow keys to move the shadow and so give the text the effect of being raised from the screen.

You can 'fine tune' the spacing between letters and words by pressing F7 from the Main Menu. Use the left/right arrow keys to alter the distance between letters and the up/down keys to alter the space between words.

## Summary of Options from the Main Menu

- F1 - Start scrolling the text up the screen
- F2 - Start scrolling the text from right to left across the screen
- F3 - Edit the text
- F4 - Set scrolling parameters (see later)
- F5 - Set colours
- F6 - Set shadow
- F7 - Set spacing
- F8 - Disk menu (not available from the demo version)
- F9 - Choose keyboard type (defaults to GB layout)
- Left Shift and F1-F10 - Choose fonts from bank A
- Right Shift and F1-F10 - Choose fonts from bank B

## Summary of Editing Options

- Arrow keys - move the cursor one character in any direction
- Shift & Arrow left/right - move the cursor one word
- Shift & arrow up/down - move the cursor one line
- Shift & delete (DEL) - clear all text off the screen
- F1, F2, F3 - choose the colour of the text following
- F5 - Switch on/off the text's shadow effect
- F6 - Enter a pound sign
- F7 - Enter a copyright symbol
- F8 - Justify (line up) the text to the left
- F9 - Centre the text
- F10 - Justify the text to the right



ESC - Return to Main Menu  
Hints

Pressing the HELP key from either the Main Menu or the Editing screen will provide you with a list of commands.

If you don't want your text to scroll, for example you just want it to appear under someone's face, use the editing screen. You can make the cursor disappear by pressing the left button.

If you are using a genlock, ensure it is connected and working before running the software.

You can speed up/slow down the scrolling text by holding down the right/left mouse buttons.

If the flickering effect (due to using Interlace mode) is too noticeable in your recorded work, try altering the choice of colours and/or typeface.

You can control how the text looks when it scrolls by selecting the Set Scrolling Parameters (F4) from the main menu. For example, you might decide to have all your text moving up the far left of the screen by moving the guide lines to the left with the left and up arrow keys. The horizontal guideline marks the position where the top of any text scrolling from right to left will appear.

## How to record your titles

The Amiga has a quality of video output greatly exceeding that which could be expected from a home computer and it's just perfect for connecting to a video recorder. The easiest way to do this is to make use of the colour video modulator which comes with most Amiga packs. Not only is there an RF output (for connection to your television), but there is 'composite out' signal. This signal is compatible with the 'Video In' socket of most video-recorders. The connecting lead you will need depends on your video, but is typically a Phono to BNC lead.

If your video-recorder is quite new and has a SCART socket, you can benefit from using the raw video signals from the 23-way connector at the rear of the Amiga. This is achieved by making use of an Amiga to SCART connecting cable, so pay a visit to your local television repair centre. The staff will be happy to advise you and will probably even build you a cable.

There are two main ways of recording your titles. The first way does not require any extra hardware, just the right cables. Once you have connected your Amiga to your video recorder, all you have to do is

create the titles with the titling program, and then start recording. Easy.

The second method is to use a 'genlock'. A genlock is a wonderful piece of hardware which can do something rather special. It will take a video signal and combine it with the output from the Amiga. Any part of the Amiga screen in a background colour of black becomes transparent, and the video signal underneath shows through. A typical example would be a picture of someone appearing on-screen, with their name superimposed underneath. To make use of this technique you need a video source (which supplies the picture to superimpose the Amiga graphics onto) and a video recorder to store the results. This means that you either need two video recorders or a video camera and a video recorder.

The Big Alternative Scroller is such a terrifically easy program that just using will take you toward being a video expert. That is why AUI chose this fully useable, interactive demo version as its cover disk. For a full review of the complete program see page 24.

## Faulty Disk?

*In the event that your Userdisk fails to load, please return it to the address below for a free of charge replacement, and allow 28 days for delivery:*

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*Please include your name and address in BLOCK capitals.*

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## IMPORTANT OVERSEAS READERS' NOTICE

Due to difficulties in importing genuinely usable software into many countries, you may not have been fortunate enough to receive the all-new AUI cover-mounted Userdisk. If you subscribe to the magazine using

the special page inside, the cost of the subscription will include packing to enable you to receive the disk with each issue of the magazine. If you do not wish to subscribe, each disk will be available at a price of £4.00 from the following address:

**Lazahold Ltd., P.O. Box 10, Pallion Industrial Estate, Roper Street, Sunderland, England. SR4 6SN.**

Please make all cheques/International Money Orders payable to MCPC Ltd for £4.00 per disk. This price will include packing and Airmail service to all overseas destinations.

## GREENER BY CHOICE

Make readers of other covermounted disks go green with envy when you win the yearly "Trip for TWO to Hong Kong" prize. If that weren't enough there are also two monthly prizes of a free subscription for you or anyone of your choice.

This 'Green with Envy' draw can be entered by simply returning your used Userdisks, once you have finished with them, to TIB PLC. They will supply AUI with names and addresses of readers who return their disks. Each month the draw is made for the FREE subscription offer. If you already have a subscription you can extend it further or supply it as a present to a colleague.

In September of each year the major draw will be made at our London offices and a lucky 'green' reader will win the fabulous holiday for two in Hong Kong with hotel, flights and spending money! You are allowed as many individual entries as you wish! For each disk you return a separate entry into the draw is made. Of course disks must be of an acceptable standard - as if they are not they'll be rejected and you'll lose out on your entry as well as your disk. Returned disks will be recycled so helping to save material and protect the environment.

Send your used disks to: **GREEN DISK RETURNS, TIB PLC., 36-50 Adelaide Street, Bradford, BD5 0EA.**

*Make readers of other covermounted disks go green with envy when you win the yearly "Trip for TWO to Hong Kong" prize.*

## The End

## An AJ Production



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The Video Toaster. Is this the launch pad to the mainstream that the Amiga has been waiting for? Mike Nelson explains how one product can be the 'hottest' and the 'coolest' of the year...

# THE VIDEO TOASTER

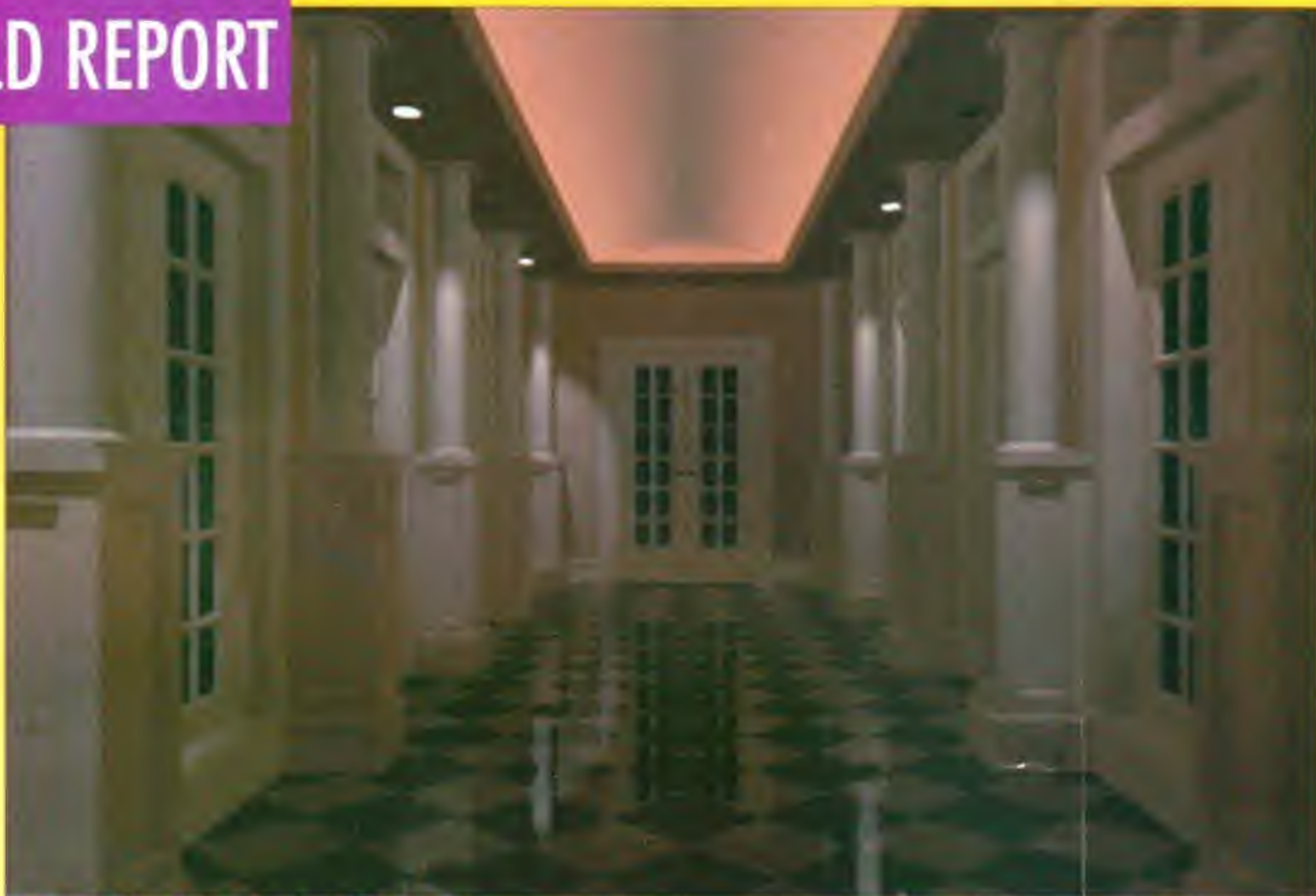
**T**he AmiExpo show report else wherein this issue gives you some idea of the importance of the NewTek Video Toaster, but its capabilities are not as well known over this side of the Atlantic, so now that it really exists, here is the lowdown on the beastie.

The attention generated by the Toaster is little short of phenomenal, surpassing even the most optimistic hopes of NewTek's Marketing vice-president, Mark Randall. Even now, some four months after shipping commenced and the initial atomic blast-like impact, the media interest is staggering. The vagaries of the American use of English allow the Toaster to be simultaneously the "hottest" and "coolest" product of the year, and the fact that three channels on television were concurrently using Toaster graphics, with another one talking about it, on one night, just goes to show that there is no sign of this momentum slowing down. Randall also reported seeing Toaster effects in a rather dubious video, called something like Catalina Girls, with a more "limited" distribution! (How he came by this tape is a matter for conjecture, however!)

The existence of the Toaster has been a closely guarded secret for several years now, with occasional glimpses of its potential to seriously whet even the







## THE VIDEO TOASTER

most anorexic of appetites. The Toaster and Amiga combination's main feats include literally hundreds of special effects, like on *Top of the Pops* where the picture shrinks and rapidly disappears up the presenter's nose, after flying around the screen a bit. In addition to the fades and wipes, the Toaster can freeze a frame into its memory, before saving it to the hard disk.

The Toaster is marketed as an all-in-one broadcast studio, and this is pretty close to reality. The hardware plugs into the video slot on the right of an A2000, but does not fit into an A3000, which is due to the smaller case of the latter, but Commodore apparently did not actually warn developers of this alteration, and also the Toaster does not quite see eye to eye with the new Denise chip. NewTek are currently thinking about these problems with a view to getting an A3000 version on the shelves, but there is not real hurry with everything going so well on the A2000; sales have soared to reach several thousand, and demand is still outstripping supply to such an extent that some dealers are selling it for three times its list price.

When the fairly substantial board is located, there are a couple of outputs, and four inputs for the switcher part of the package. These are your video sources and could be cameras, VCRs or laser disks etc. Connecting several sources, particularly VCRs, causes a slight problem in that the signals seen

by the Toaster are likely to be out of phase with each other, and so a piece of hardware called a time base corrector is needed to synchronise the frames and smooth everything out. This can add another \$1000 or so to the cost, but many manufacturers are actually building time base correctors into their VCRs, and also their price is falling steadily, so this should not be too much of a barrier to happy toasting. In addition to the four inputs, the Toaster allows two 24-bit digitised pictures in memory, and it will also provide a coloured background as a seventh source. Switching between the different sources using a variety of transitions is simply a matter of selecting the two icons for the two frames, and either using the automatic function with its definable speeds, or by sliding the T-

**"NewTek's own 4 VLSI chips extend the graphics resolution of the Amiga to such a degree that the results are equivalent to true television broadcasts"**

bar using the mouse to determine speed.

The key to the Toaster's potential is that NewTek's own 4 VLSI chips extend the graphics resolution of the Amiga to such a degree that the results are equivalent to true television broadcasts. The Toaster is also supplied with a paint program which works on this 24-bit image, allowing the artist access to a mere 16.8 million colours, at a resolution of 768 x 480 pixels (that's NTSC). Such

numbers make you wonder how HAM artists manage with only 4096, doesn't it?

NewTek are not renowned for underdoing things, so they popped an excellent 3D-Rendering program (Lightwave 3D) with hundreds of predefined objects into the package. This, coupled with the paint package, is easily enough to justify the cost of the Toaster, but NewTek wanted to be sure that nobody would accuse them of being miserly by throwing in a character generator for doing captions, just to be on the safe side. Naturally this works to the high standards demanded by professional "videographers", as they are known in the U.S.A. The cost of the Toaster is insignificant when compared to the £250,000 you would have to fork out for several boxes of traditional equipment, which don't even play Lemmings.

How does the Amiga fit in? As AUI readers, you are doubtlessly convinced about the Amiga's attributes, with its incredible graphics and stereo sound, but the rest of the computing world is largely unimpressed, preferring monochrome Macs, and mute PCs. The big boys are running scared, and it is all because of the Toaster. NewTek have astounded the established aficionados by declining massive financial inducements to develop a Toaster for both the Apple and IBM machines, self-proclaimed as the ultimate video platforms. Why is this?





The Amiga was designed with video applications in mind, and hence its entire architecture is timed to be compatible with video standards, and the overscan graphics modes are further testament to this. (This explains why the clock speed is actually 7.16 MHz, rather than 8, and is exactly double the video requirement of 3.86 MHz, so conversion is apparently easy). The PC and Mac would require very expensive circuitry to match this, and the cost will be far more than buying an Amiga 2000! Commodore are naturally laughing all the way to the bank; A2000 (or the A2500 — a 68030 version not sold in the UK) sales are reported to have doubled

**"Except when it comes to designing things, NewTek are not known for their serious, mature attitude to life"**

since the Toaster hit the streets.

From a technical viewpoint, the secret of the Toaster's low pricing is largely to do with the fact that most of the trickery is done by the considerable amount of software which totals about 5 Mb on 8 disks, rather than expensive, inflexible hardware. This approach also means that further developments are possible, simply by writing new code.

You may be wondering how the Toaster got its rather unusual name. Except when it comes to designing things, NewTek are not known for their serious, mature attitude to life (anyone who has a sign reading "Nuclear Waste Dis-

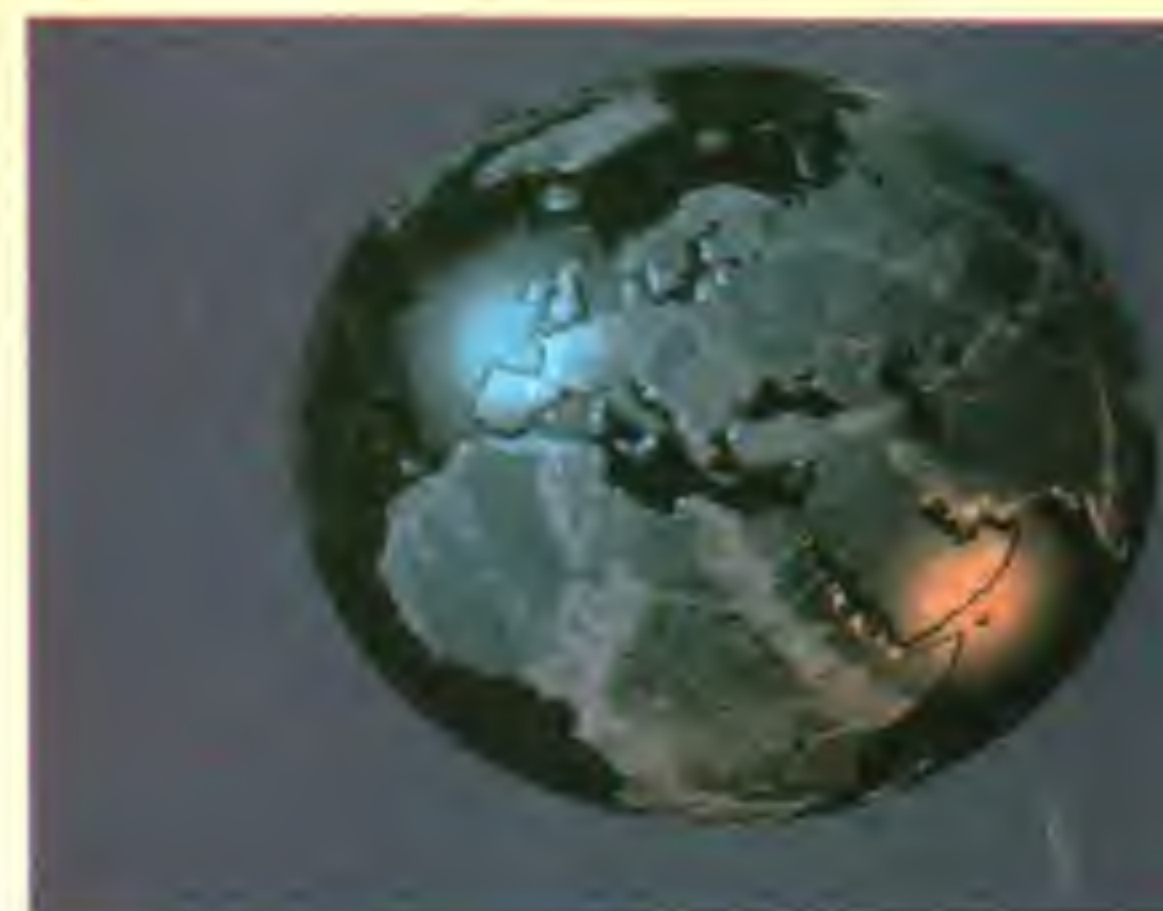
posal Systems" above their premises cannot be totally sane!), and so when asked about their current developments, they are reputed to have replied that they were making a computer-controlled toaster which burned the company logo into the bread! Whatever the truth, the name was adopted and the Toaster was born.

The last few months have seen the Toaster touring all manner of exhibitions, some of which may have seemed slightly inappropriate. NewTek are Amiga fans par excellence, and they were really upset when Apple started pushing the Mac as the best thing in video, so they sneaked into a MacWorld show with an Amiga, Toaster and Macintosh computer. Calling their system "Trojan Horse", it was soon realised that the Amiga was behind the amazing display of video effects, and NewTek proved a point eloquently by walking off with the accolade of "Best Product at MacWorld" from many pundits. Byte magazine also named the Toaster as one of the best products of 1990.

It may be too early fully to judge the impact of the Amiga in the exciting new video arena, but many experts point to the story of the Apple Macintosh computer and its struggle in the PC-market. Until Aldus Pagemaker provided that unassailable niche for the Mac in the desktop publishing world, the computer was an expensive toy with no real benefits over existing business machines. Laser printer technology became afford-

**"The Toaster is marketed as an all-in-one broadcast studio, and this is pretty close to reality"**

able, and a new computer industry was born, taking the Mac with it. The Toaster is being seen as that impetus which the Amiga requires to shake off the games machine image, and show the world what a remarkable machine it is. After all, if you really want a PC, a Macintosh, and a broadcast studio that plays Lemmings, all you need is an Amiga with a couple of hardware emulators, a Toaster and, of course, a copy of Psygnosis' horribly addictive entertainment!



Contact: Newtek, 215 S.E. Eighth Street, TOPEKA, KS 66603  
Tel: (010)-354-1146



Has Mike Nelson finally discovered the secret of Amiga digitising?

# The Colour

**F**or most of the Amiga's life, the digitiser of choice has undoubtedly been the famous Digiview from NewTek, but over the last year, a British product has been gaining ground on the undisputed champion. Manufactured in Scotland by Rombo Limited, the Vidi series is certainly beginning to give the American counterpart a good run for its money. AUI originally reviewed Vidi-Amiga last year, but Rombo have now packaged up all the individual components, initially sold separately, and thrown in a copy of Photon Paint for good measure, calling their offering "The Colour Solution". It is worth describing how the system works, and what it is capable of accomplishing.

Digitising is the process of converting any analog signal into the 1s and 0s used by the computer, which then converts them back again! The procedure can be applied to almost any source, including sound although this form of digitising is called sampling. Vidi is concerned with pictures, taking a video source of some description as its input, and passing the information to the Amiga which can then do almost anything with it. The obvious thing to do is simply display the picture, but as this image is inside the computer as a series of numbers, the full power of paint packages like Photon Paint can be applied to alter the picture.

The video source will usually be a camera, or if you are trendy enough, a Camcorder will give you excellent results. The idea is that you focus this on your source, fire the system, and the Amiga monitor displays the results. The source will usually be still pictures as trying to digitise living people or animals is pretty difficult for, unless they are dead or severely anaesthetized, any movement will blur the image. This occurs because it can take several seconds for the computer to do its thing, and Rover is unlikely to stick around long enough to be digitised!

Amiga users will know that their machine comes with 4096 possible colours, and also a special display mode called HAM (Hold and Modify) to allow them to all appear simultaneously. Usually, screens are limited to 16 or 32 colours

from this palette of 4096, but HAM is a design quirk which thankfully got left into the final Amiga specifications.

Before you can understand how a digitiser works, you need some inside information on how the Amiga colour system functions. If you look at the colour requester of programs like Preferences on the Workbench disk, you will notice three sliders labelled Red, Green and Blue (RGB). Each of the 4096 colours is composed of a certain mixture of red, green and blue, a value between zero and 15 to be exact. For the mathematically-minded,  $16 \times 16 \times 16$  comes to the magic number of 4096. Further, if you need four bits to represent 16 numbers, 4096 numbers need 12 bits.

The picture from a television or video contains considerably more information to describe the image than the Amiga is capable of dealing with, so digitising at this level will only ever be an approximation to reality. How well this approximation occurs is naturally limited by the resolution of the hardware doing the digitising, and as the photographs show, the results are very impressive indeed.

The problem of getting a television picture into the 4096-colour mode of the Amiga is largely one of historical interest, rather than any practical hindrance. This is mainly due to the first of the Colour Solution components under consideration, the Vidi-RGB colour splitter. In the old days, the only method available was to hold a series of red, green and blue filters in front of the camera, while digitising each component individually. This was necessary because the television signal comes as a composite of these elements, but the advantage was that a low cost black and white camera would be used. This was fine for people who wanted to do only digitising, but for the most part, the monochrome camera was a great restriction as home videos were becoming increasingly popular, and understandably the demand was for colour.

Around the time of Vidi's birth, colour cameras were becoming much cheaper and the signal quality suitable for digitising, but the central problem of the composite signal remained. In response to

this, Rombo developed the colour splitter to separate electronically the RGB portions, and hence do away with the need for filters. This greatly enhances the practical usage of Vidi as the entire process takes a matter of seconds and there is no user intervention. At this point, it is worth noting that the splitter is available as a separate entity and works well with Digiview, but is not automatic - a button on the unit toggles the current colour being separated, and the Digiview software just thinks there is a filter in the system, as normal. This also functions with Vidi, so you can digitise your mother-in-law using just bullfrog green if it makes you feel any better. (Please don't send us the picture though!)

The Vidi-Amiga with Vidi-Chrome combination has really come into its own as a result of the splitter, but it scores highly too because it is so easy to use. Digiview is incredibly fussy about the camera it requires (black and white is still the order of its day), and also the lighting has to be just right; realistically you need quite a pricey set of lamps. Vidi is much more tolerant of conditions, partly because it is so flexible in that brightness and contrast levels can be set by the software, and also by control potentiometers in the black box as well. The picture of the owl was taken from an album cover, on my floor, using sunlight as the illumination! You can't get a cheaper set up than that.

The other big advantage of using Vidi-Amiga is that it can take stills from a paused video recorder, assuming the pause is stable enough. Older machines tend to be unable to cope with such an idea, but modern VCRs provide a perfectly adequate pause function for Vidi. Another use for this system is in taking 16-grey shade stills from a moving video source, and if you have a large enough Amiga, the system is fast enough to form a simple animation. I have seen this very set up used in a prototype ultrasound scanner which could be used to produce images of the heart moving around - without cutting the person open!

The pictures, although very good, can sometimes require a little attention to

*The Vidi-Amiga with Vidi-Chrome combination has really come into its own as a result of the splitter*



# Solution

touch up the defects, and what better to use than Photon Paint, one of the most popular HAM paint packages available? As well as messing about with the colours, you can also cut and paste between images very easily, so it is now possible for you to score that final touchdown in the Superbowl, or join Luke and the boys as they zoom in to blast the Death Star (again!). Ever wanted to see what the lounge would look like in a nice shade of purple? Just zap it into the Amiga, and use Photon Paint before even a drop of real paint is applied. Another possibility is a nose job before the plastic surgeon so much as sets foot in an operating theatre, or possibly a customised car! The list is endless, and Vidi is an excellent way of exploiting your Amiga, especially if you can't draw!

The ColourSolution fully lives up to its name, and at £179 represents very good value for money. Camcorders are appearing at ever-decreasing prices, and so you could easily find yourself expanding the horizons of your Amiga beyond measure. In addition to the practical benefits of Vidi-Amiga, the fun factor almost justifies the price on its own. Ease of use comes built in, and the product is well made, robust and complete with cables and excellent value. What more could you want?

**Price: £179**

**Contact: Rombo. 6, Fairbairn Road,  
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That's not all AudioMaster III has going for it! The author, Peter Norman of RamScan Software, has an affinity for compact discs. Thus we have included the Aegis CD Player Simulator for your listening pleasure. Load up to 20 songs or samples to play in the background via a fully-simulated compact disc player. Since it's fully multi-tasking, the Aegis CD Player can bring a whole afternoon of music to you while you work on other projects!



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Examining the upgraded and debugged version of this graphics orientated word processor, John Walker sees how W/P and DTP are moving closer...

**P**en Pal is an innovative word-processor that provides many of the facilities of desktop publishing programs. It can mix text and graphics on the page, run words around a picture and output colour. It sets new standards for an easy-to-use interface, has good on-screen help, and includes a forms designer and a fast flat-file integrated database.

The version reviewed was 1.3 revision 14, which indicates the amount of debugging and enhancements that have gone on since the program was first published. Six months ago, for example, version 1.3 was on its first revision. The program now seems stable and can offer a serious challenge to most other Amiga word processors. As a graphics-orientated

program, it appears labelled Set-Tab, so that you can define the tab settings you require.

This is particularly helpful in the early stages of using the program since you always know exactly what action you are about to take because the pointer tells you what it is. As you grow more confident, you can use keyboard equivalents instead of pointing and clicking. There is also on-line help that covers the program's main functions. The toolbox has one disadvantage. It means that there is less space to display the width of a page so that, if you are using a page more than seven inches across, the screen scrolls to accommodate the line of text. This, of course, makes it impossible to read full lines of text without scrolling back and forth, which can be irritating.

The tools provided are for drawing lines and boxes, which can be filled with patterns or which ever colour you require. Those with colour printers will find that Pen Pal provides good results using the Preferences' printer-drivers, although there may be problems when

# Pen Pal V1.3

tated program, its only serious rival is ProWrite 3.0.

Pen Pal requires a minimum of 1 megabyte of RAM and, preferably, two disk drives. It comes on two unprotected disks together with a fat manual that has a good index, and a slim addendum to explain the changes made to the latest version. Transfer to a hard disk is made easy by a supplied installation program.

What strikes you first about the program is its interface. The display is closer to a desktop publishing program. At the top is a menu bar with a clock below that a ruler, and down the left-hand side a tool-box. There is a scroll-bar and other controls to the right and another scroll-bar at the bottom.

The interface has been well thought out. The ruler and some of the scroll bars can be hidden and there is a zoom gadget to expand the text window to its biggest possible size. You can also call up a split-screen view that shows your document in miniature as it appears on the page.

When you move the mouse-pointer either to the ruler or the tool-box, it changes. Put it over an icon on the tool-box and it will tell you the icon's function. Place it on the ruler and a little box

appears labelled Set-Tab, so that you can define the tab settings you require.

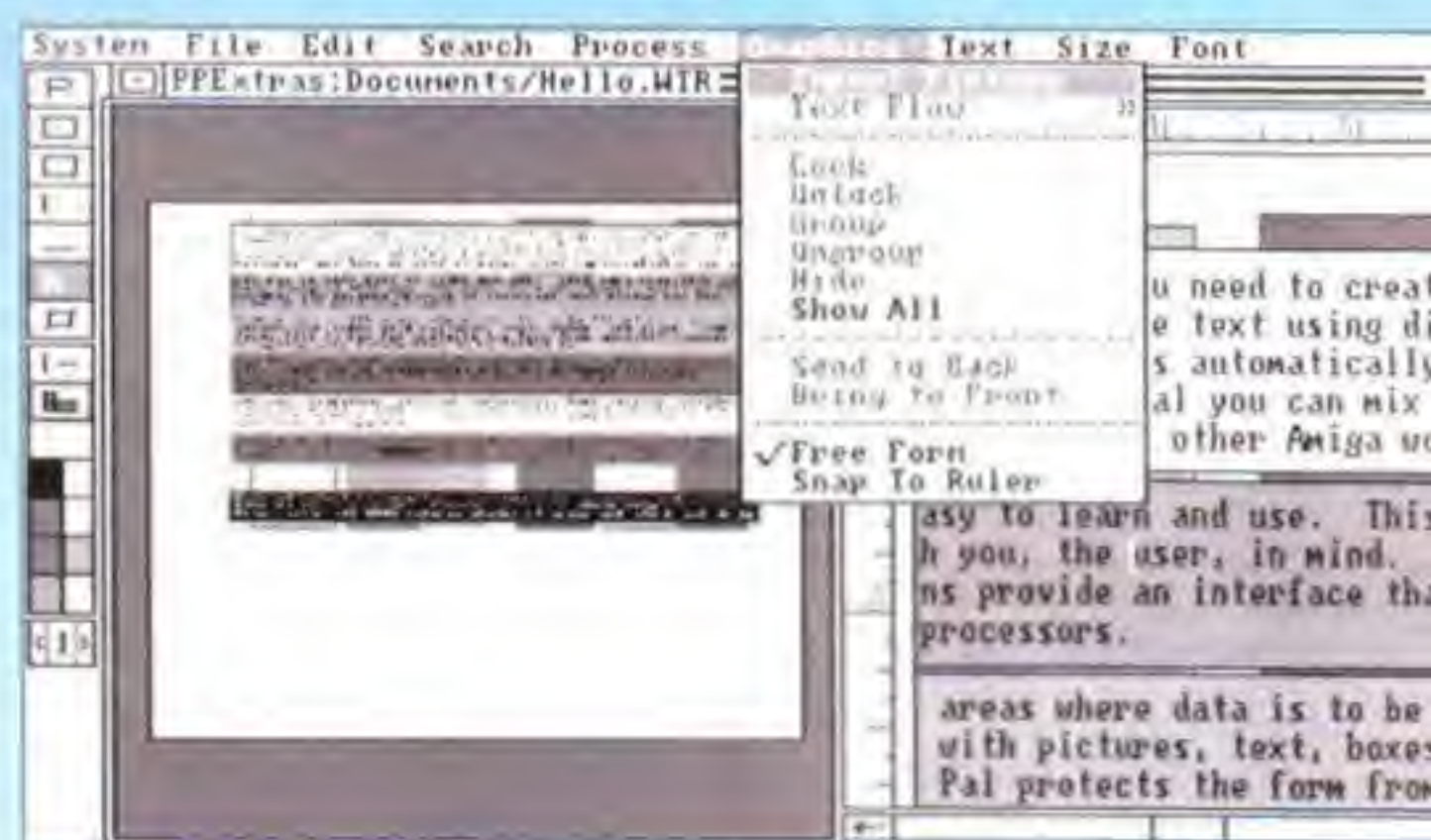
Pen Pal can do things some other word processors cannot. It lets you see a full page in miniature on-screen, a useful facility that is lacking in its main rival Amiga programs.

It can also run text around irregularly-shaped graphics, which no others can do. You can achieve a similar effect with ProWrite, but only by moving each line of text manually. Text can only appear on one side of a graphic however, either to the left or the right.

Pen Pal can also incorporate graphics in any resolution, including HAM images with 4096 colours. When printing, it allows you to make a graphic print using the Amiga's bit-mapped fonts or a text print employing your printer's built-in fonts so that you can combine graphics with the best possible quality of print. Up to 200 bit-mapped fonts can be used at a time, and an enhancement to the 1.3 version makes it easy to switch from one font directory to another. The best results, though, will come when using the printer's fonts.

There are limitations, though. In text printing, you are restricted to one font in a document and the text can be printed

**"Pen Pal can incorporate graphics in any resolution, including HAM images with 4096 colours."**



only in black. So that what you see on the screen resembles what is printed, you must use a font that has characters of a fixed width. When using text printing, the only way you can get more than one font in a document - say, for a headline - when using the printer's built-in fonts is to import the words as a graphic from a paint program.

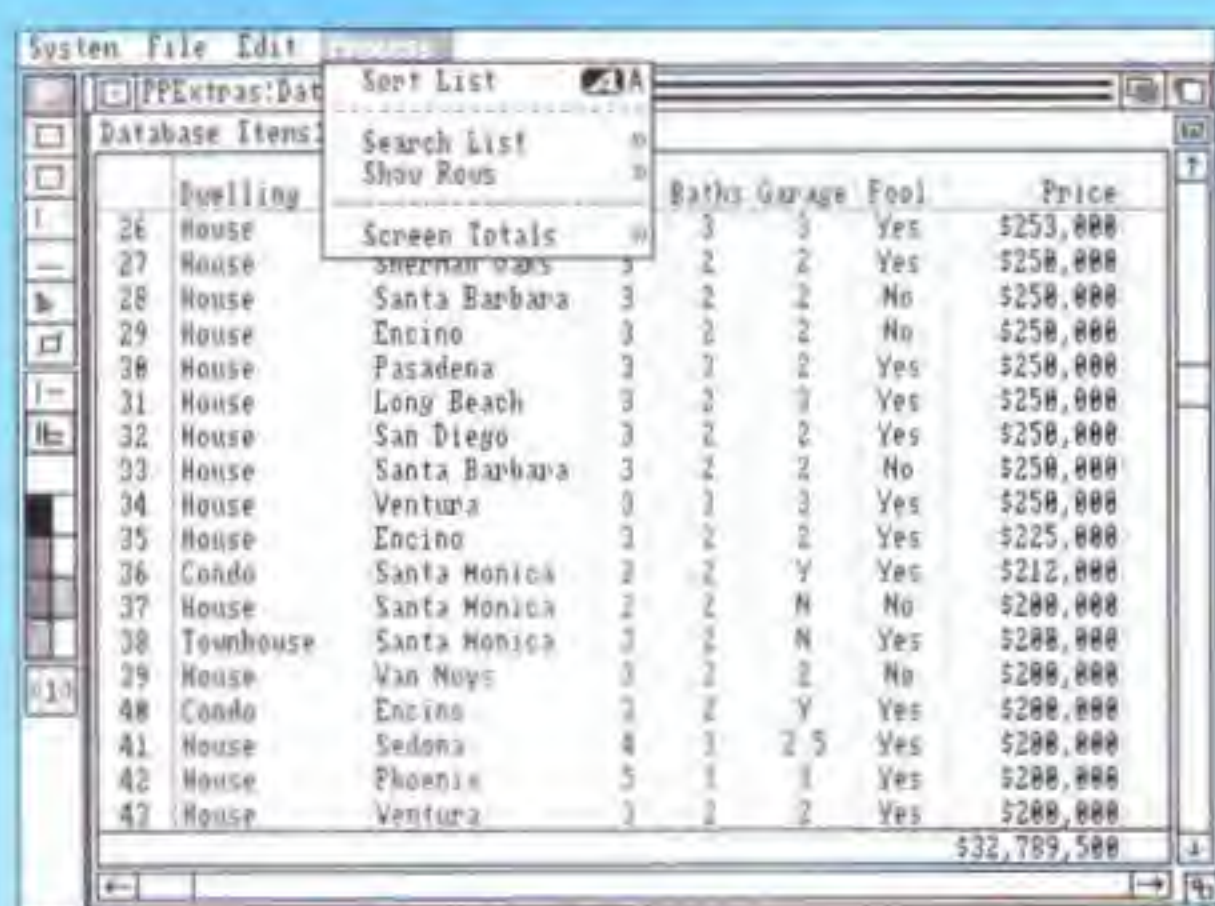
Pen Pal's graphics handling is excellent. Images can be quickly cropped and re-sized and text will automatically be re-flowed to the left or right. Graphics can be locked in position on the page and cut, copied and pasted with ease. When you import graphics, the program sensibly informs you of the amount of memory needed and how much is available to you. You can alter the size of the draw- ▶

## TEST DRIVE



# TEST DRIVE

## Pen Pal V1.3



Dwelling	Baths	Garage	Pool	Price
26 House	3	2	Yes	\$253,000
27 House	2	2	Yes	\$250,000
28 House	3	2	No	\$250,000
29 House	3	2	No	\$250,000
30 House	3	2	Yes	\$250,000
31 House	3	2	Yes	\$250,000
32 House	3	2	Yes	\$250,000
33 House	3	2	No	\$250,000
34 House	0	2	Yes	\$250,000
35 House	2	2	Yes	\$225,000
36 Condo	2	2	Yes	\$212,000
37 House	2	2	No	\$200,000
38 Townhouse	3	2	Yes	\$200,000
39 House	0	2	No	\$200,000
40 Condo	2	2	Yes	\$200,000
41 House	4	1	Yes	\$200,000
42 House	5	1	Yes	\$200,000
43 House	3	2	Yes	\$200,000
<b>Screen Totals</b>	<b>30</b>	<b>3</b>	<b>Yes</b>	<b>\$32,789,500</b>

ing, maintaining or changing its proportions as you do so. Once on the page, the picture can be cropped and resized.

**"Uniquely among Amiga word processors, Pen Pal includes a good forms creator and a database which integrates well with the word processor."**



On-screen, the picture is shown with eight colours, but it will print with its original colours. Two or more pictures can be grouped so that they form an entity and can be modified or moved together. A graphic can also be locked so that it cannot be moved. An "Undo" function allows you to reverse many actions on text as well as graphics.

Uniquely among Amiga word processors, Pen Pal includes a good forms creator and a database which integrates well with the word processor. You can have up to four documents and databases open at a time and cut and paste between

them all.

The database, which resembles a spreadsheet in using rows, columns and cells to contain its data, is fine for for name and address files, which can then be used with the word processor for mail merge purposes in sending the same letter to several people, or for printing labels. It has a simple report generator of its own, but its data can be merged with templates created in the word processor to produce fancier layouts.

Like a spreadsheet, you can use it to perform calculations, although only simple ones with formulae limited to 256 characters that use the four standard arithmetical operators: add, subtract, divide and multiply. Columns can contain besides calculations and the amount that result from them, text, alphabetical characters, a date, a time, a Yes/No toggle, or phone numbers. The size of each field is small - a text field can have no more than 64 characters. Future versions of the database may include sound and graphics.

The database has reasonably good sort and search facilities - certainly adequate for the purposes ancillary to the word processor for which it will be used. Other databases can be imported in ASCII format providing that a field has no more than 64 characters, no more than 32 fields to a record, and no record contains more than 1024 characters. You can also export a database as an ASCII file, and the same company's SoftWood File Hsg can also read Pen Pal's databases.

Pen Pal's forms creator can be used for many purposes, from labels to complex invoices. To create a form, you enter the text and then use the program's tools to draw lines and boxes around the words. It is also possible to import any Amiga graphics as part of the form.

It works particularly well with forms intended to be filled out on the screen before they are printed. A special feature permits information to be entered only in designated spaces. Once one section is filled in, Pen Pal automatically moves to the next insertion point. After it has been printed or saved to disk, the form can be restored to its original state so that it is ready to be filled in again.

Pen Pal has all the functions that you would expect from a standard word processor - except one. You cannot directly insert a file into another document. You need to load the file first into its own window and then cut and paste between windows. As you can have up to four documents or databases open at a time this is not too much of a disadvantage.

The program comes with a 100,000 word dictionary. The spell-check is on the slow side, taking 40 seconds to complete a 4,000 word document containing no errors. But Pen Pal lacks a thesaurus and facilities for indexing and adding footnotes. It has no macros nor any automatic hyphenation of text or control of widows and orphans (short lines at the bottom or top of a page).

Rather than providing just a word count, Pen Pal gives the number of sentences, paragraphs and characters used in a document, together with statistics on the size of words, sentences and paragraphs, and a indication of the reading level required to understand the document. It also tells you how much chip and fast memory is available, the amount that has been used, the space available on your disk and the amount required by the document.

Unlike some graphic word-processors, Pen Pal's screen updates are fast. It kept pace with my typing in a document of 4,000 words. But in some respects, it is slow, particularly when loading a document. It takes a tedious 72 seconds to load 4,000 words in ASCII format. In comparison, Gold Disk's Write (also known as Transcript) loaded the same document in four seconds.

In the future, I would like to see support for Compugraphic fonts and for PostScript printers. For those with colour printers, there is probably nothing better for integrating text and colour graphics in the form of a straightforward report. As a page layout program, though, it has the great drawback of not allowing more than one column of text to a page.

These weaknesses have become more noticeable with the release of ProWrite 3.0, another graphics-oriented word processor which allows multiple columns, and has a thesaurus, an AReXX port and the ability to use a printer's pica, elite, condensed and wide fonts at the same time.

Pen Pal's forms creator and integrated database give it facilities to be found nowhere else. A lot of effort has gone into making the program easy to use. It remains a very versatile word-processing program with a few surprising omissions and some unusual strengths - but one that will soon be in need of updating if it is to survive and prosper.

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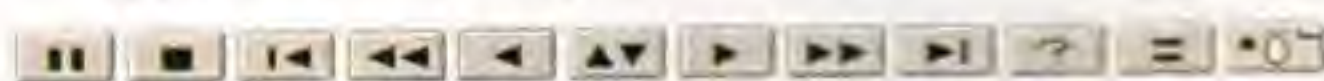


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# Coming soon to an arcade near you!



Virtuality pods, or modules, in the arcade.

## FIELD REPORTS

ital sound effects leave only the smell of burning napalm to the imagination... An inbuilt microphone allows communication between friendly or competing players. It's not all fighting, as precision flying and refuelling must be achieved to progress to the next stage. The second game, or experience, was Battlesphere, where, as a future space pilot (what else is new?!) you have to outmanoeuvre other pilots in a dangerous asteroid environment.

These games proved very popular with those present, and I overheard a number of interested parties saying how they would soon be introducing them into their games arcades. The initial cost of participating in a 'virtuality experience' was expected to be £1, which would give the player from three to seven minutes playing time, depending upon the skill shown, as usual. Where an attendant is present, and a group of players wished to play together, it was intended that a fixed rate could be applied for say half an hour's play on a number of machines. If you have room at home and fancy a machine all to yourself, be prepared to part with £20,000. Now you know why a single game is being priced at £1.

Although the launch concentrated on these games, other virtual reality developments in the areas of military simulation and commercial use were discussed. The military uses of simulated movement within alien environments hardly needs elaborating upon to seasoned gamesplayers, but the commercial uses are equally interesting. We're all familiar with the use of CAD in the design of modern buildings, and interfacing this with a virtuality system would provide the possibility of people simulating working or relaxing within the projected environment and judging its suitability.

**"If you have room at home and fancy a machine all to yourself, be prepared to part with £20,000"**

On display with the pods, or sit-in modules, was a stand-up version incorporating more body-mounted devices. Primarily, this took the form of a glove with sensitive pads. As the wearer touched an object in virtual reality, the pads on the glove would convey a tactile response to the hand. If the wearer flexed his hand as if gripping an object, that object would be gripped in virtual reality. Presumably, this could be taken to logical conclusions with an intense grip supposedly crushing the virtual object or a throwing action

Alan Puzey is plunged into the world of Virtual Reality - will his real world ever be the same again?

**I**nsert the latest game into your Amiga, boot up, dim the lights and enter the world of dreams that only the Amiga can give. But wait - is it good enough, anymore? The graphics are great - sure, but there are distractions, and does the sound from that monitor give you the illusion of sensoround? And how many games can you link up with ten other players, either to fight against, or form a battle unit together? Or are you waiting for VIRTUALITY?

The world of virtual reality has just been revealed to a select audience of invitees at Wembley Conference Centre, at the world launch of Virtuality. Virtuality is the name used by W Industries, for a range of their projects based on virtual reality, which is the concept of immersing the user within a computer-generated world where the normal aural and visual senses are severed from the real world. However, what is sheer torture for one person is the ultimate thrill for another - that is how closely this entertainment resembles the sensory deprivation and white noise torture that we frequently see spies undergoing in movies!

With the use of helmets and other body mounted devices, people can see, hear, touch objects and each other in a virtual sense. The illusions of walking, flying, tunnelling - almost anything, are possible by the appropriate interfacing of these

**"Your hands rest on the two joysticks, controlling all the usual airborne manoeuvres and weaponry."**

devices to graphic and sound reproduction

W Industries discussed and demonstrated a number of virtual reality applications, but the main launch concerned itself with the games aspect, centred on a 'pod' in which the player sits and participates in Virtuality 'experiences.' These pods are like modern plastic and metal versions of fairground dodgem cars. Players are then given a helmet which incorporates quadraphonic headphones and two colour liquid crystal displays which cut out normal sound and vision, replacing them with computer images. These give full stereoscopic vision and CD quality music and sound effects, creating the the impression of being inside the game itself. W Industries thought that the term 'experiences' was more appropriate than games. Virtuality was launched with two experiences ready for playing, but this should be increased at least to eight by the end of the year. It is hoped that a juke box of constantly changing experiences will keep the players returning to the arcade for more.

Of the two games available, Virtuality combat game involving a Harrier jump-jet, proved the more popular - probably because of its familiar form from conventional games. The excitement of playing this in virtual reality, however, greatly enhances the experience. The image constantly changes as you look up, down or behind. The quadraphonic music and dig-





resulting in the virtual object being thrown. For the future, it is hoped to produce a body stocking that would enable these interfacing pads to operate all over the body. Just don't ask me what future games developers will do with that!

What on earth is all this doing in an

**"The mammoth task of presenting real time graphics in a scrolling 360 degree environment is left to two very powerful, second generation Texas chip sets"**

Amiga magazine, you ask. Well, entertaining you I hope, but there is a more pertinent reason. Behind every one of these Virtuality modules there lurks an Amiga 3000. Denuded of its case maybe, but there nevertheless, providing unrivalled computer power to these futuristic fantasy machines. Back in the mid 1980s, W Industries started developing virtual reality technology using the A500 because of its graphics and sound capabilities at an unbeatable price. Sounds familiar, eh! Work continued with the A2000 when that was released, and after close association with Commodore, the units as they exist today were perfected using the new A3000.

In fact the graphics side of the Amiga is not so crucial as the sound output. The quality of the four digital sound channels enables them to be used as the sole provider of high quality sound for the Virtuality system, whereas Amiga graphics only provide the still frames used for presentation, scoring, etc. The mammoth task of presenting real time graphics in a scrolling 360 degree environment is left to two very powerful, second generation Texas chip sets. W Industries also use the comprehensive Amiga input and output ports extensively within their systems. It was reassuring to hear

the technical people on hand speak so highly of the Amiga component in this project.

Future developments in both software and hardware are planned. For the moment W Industries intends to produce all software internally, but are considering issuing licenses to third party software houses at a later date. The company was keeping pretty quiet about future games - for fear of piracy of ideas? - and the only scenario mentioned was a game based on powerboat racing.

On the hardware side, virtually all the components are modular, allowing easy replacement of chip sets as they are developed. Movement of the pod during gameplay should be the next development. The onboard computer already does the necessary algorithms to match this to the games action and the bolt holes are already there in the pod, awaiting the mechanical linkages. To those of you who have experienced the sensation caused

*The helmet, or Visette, which is the main interface between operator and the virtual world.*

by this sort of effect - it has been used on various rides in Disneyland for a number of years, you will know how much extra reality it brings. The sense of smell may also be embraced in future modules.

Looking further into the future, Dr Jon Waldern, Managing Director of W Industries, predicted that the helmet would be replaced with a design based on a combination of Walkman plus spectacles. Avid gamers would be able to purchase these sets and plug into special sockets where Virtuality was sited. It is not anticipated that the size of computers would diminish sufficiently for players to carry the whole system around with them, like the Walkmen of today. The carnage produced by the mixture of the real world and virtual one, in a situation such as that, would be devastating! The health and safety aspects of participating in virtual reality have been taken very seriously. Ten medical consultants were asked to look at possible repercussions, both psychological and physical. You will be pleased to hear that Virtuality has been cleared for take off and is not considered dangerous to your health.

**"Ten medical consultants were asked to look at possible repercussions, both psychological and physical"**

So, look out for Virtuality pods - coming soon to an arcade near you, and wonder if these developments have any place in the future development of the Amiga. After all, if W Industries can monitor the development of the Amiga and incorporate it into their machines, what could happen if Commodore do the same?



*Battlesphere: hunting opposing celestial battleships*



**S**crolling, scrolling, scrolling. Keep those credits scrolling, Scrolleerrr!" You may well sing this along to the old Rawhide theme (if you're old enough to remember it!), as you breeze through this new program from The Big Alternative. Scroller may well qualify for the "easiest program to use" award, which is a big plus for Big Alternative as their stated objective was to produce a no-nonsense scrolling titler for video titles and credits. The single, protected disk comes with an explanatory instruction sheet which is hardly needed. On autobooting, the program is loaded into memory and an introduction/tutorial scrolls up the screen, going through the various aspects of the program, inviting you to try them out. The program really is so easy to use that this introduction will have you using the program to almost full capacity within ten minutes.

There are already titling and scrolling programs such as Pro Video, Video Titler, which offer more facilities, so why use Scroller? For sheer speed, ease of use, cheapness - £49, and smoothness of its scrolling; certainly as smooth as anything I've seen before, professional or amateur.

After the introduction you are invited to try out the various features, which are virtually all obtained by function key presses, plus - of course - typing in text in the usual manner. Pressing 'Esc' takes you back to the main menu. Because Scroller does not use standard Amiga Dos, it does not multi-task and you cannot import fonts or previously saved text. You can save Scroller data, on a specially formatted disk, which again cannot be accessed by normal Amiga Dos means. This does mean that you cannot check data disk contents, without first loading Scroller. As Scroller is intended for one purpose only - that of producing video titles, this may not be considered an obstacle. You simply use this one program when producing titles, put them down onto video, then go back to your normal Amiga work.

Scroller will scroll text upwards, or horizontally left to right, at nine different speeds. It contains twenty different fonts, though some of these are very similar, but of differing sizes. Familiar styles are there, similar to Euro, Swiss, Script and Chelt - basically a good range of both serif and sans serif typefaces. For vertical scrolling, text can be central or left or right justified and the text width and screen position can also be set. The vertical position of horizontally scrolling text can also be set anywhere on the screen. Scroller works in overscan which guarantees that you get no nasty, unwanted edges to your titling. You can alter the spacing between letters and words, to suit, but these are global settings and

## Amiga User International The first UK Amiga Magazine

F1 Vertical scroll.  
F2 Horizontal scroll.  
F3 Edit text.  
F4 Set scroll parameters.  
F5 Set colours.  
F6 Set shadow.  
F7 Set spacing.  
F8 Disk menu.  
F9 Set keyboard type.

Scroller 1.0.00 © 1991 Alternative Image  
Presented by: Jim Rogers

## TEST DRIVE

Alan Puzey  
examines the full  
version of the  
program demoed  
our Userdisk

"Keep  
those credits  
SCROLLING"

apply to all the text in a particular file. You are restricted to that font for all the titling in that file. This could be restrictive if you wanted a larger font for main titles, you can only differentiate by use of upper and lower case or colour changes.

There are two basic pen colours and a variable drop shadow can be added, if required. If not required, this can act as a third pen colour. These, and the background colour are changeable throughout the 4096 basic Amiga colours. This is done by a strange-at-first keyboard operation, rather than the familiar sliders, but is very fast as you get used to it. This keyboarding style is symptomatic of Scroller functions, and works well. Sorry Mouse!

In a working situation, Scroller performs well, both on screen and when downloaded onto video. The normal warnings regarding titling prevail: as it's in high res, there is the chance of flicker if you use thin fonts, thin drop-shadows or too-fast a scrolling speed. In practice, with text on a plain background, I found that speeds 1 and 2 were too slow, 3, 4 or 5 were the best and 6 to 9 caused flicker or were

too fast. When using the text superimposed on a genlocked moving video background, the flicker was far less noticeable and speeds 6, 7 and 8 were far more acceptable. Speed 0 stops the scrolling; this could be useful for emphasis, as the speed setting can be changed during a presentation or when transferring to video. A useful function.

In conclusion, it must be said that this is its intended use and makes it a winner. Big Alternative may add the following features to the next version: multi-tasking, installation to hard disk, mixing fonts within a file, the loading of ASCII files and the use of standard Amiga fonts. Whilst these are all desirable features, will they detract from the speedy, efficient program that Scroller is now? Only you, the user, can decide.

The scrolling text, recorded on video, looked even better than when working with it on the Amiga monitor.

**The Big Alternative Scroller**

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# USER PORT



# A

(pics a, b, and c)

These delightful ray-traced artworks were created using an Amiga 2000, Sculpt 3Dxle and 4D. All of the images were produced by Malcolm Thornton of Frimley on an Amiga using Sculpt 4D's 24-bit option. The image area measures 2800 pixels wide by 1900 pixels high, therefore one image is about 15 Megabytes in size. Each image was rendered using various 68000 series processors and took differing amounts of time to complete, from 17 hours to 120 hours.

(pics d, e, f, g)

These super quality digitised images come from a commercial source, Nick Williams Broadcast (0792 470503) and were produced using a television broadcast quality camera. The pictures are part of a library which is being compiled and created to offer users a high quality pictures at low cost.

(pics h, i, j - please use titles)

These graphics were created by K.J. Doughty of Milton Keynes and have been titled, Atmosphere2, Personal computer, and Sound Station, by the artist. The design packages used in their creation were Deluxe Paint II, PhotonPaint & DigiPaint.





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# COMMUNICATE WITH DIAMOND



THE NETWORKING AND DATACOMMS SPECIALISTS

In this age of Information Technology, so much of what we do is becoming more and more dependant upon computers and their ability to communicate with one another over distances. We are bombarded with new jargon and concepts from all sides and keeping up can be a real problem. Serial ports, parallel ports, packet switching, modems, bits & bytes and networks and a confusing mix of baud rates and protocols all add up to a bewildering maze.

As a service to our vast customer base we are installing Bulletin Boards at all of our shops. Very soon, you will be able to link into a world of public domain software, conferences on a wide range of subjects and discuss technical problems with experts in many fields; all for the price of a phone call.

This service will be free to our software club members.

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Cable for modem	£15.00

## SOFTWARE

KComm2	£29.00
Bulletin Board s/w	P.O.A.

## DIAMOND PROJECT SHEET

DATA COMMUNICATIONS



### What do I need?

To gain access to the world of data communications you will need five things. A telephone a computer, a modem and a cable to connect the modem to the computer and finally some communications software.

### What is a modem?

A modem is a device which converts between digital computer signals and sound signals and sends them down and receives them from a telephone line.

### What is

### Communications Software?

This is a program which converts your computer into a terminal. It will perform a number of useful tasks such as making an appropriate modem automatically dial the

service that you wish to use. It will have a number of ways of downloading files that ensure that what you get is free from error and it will allow you to have typewritten conversations with or send prepared documents to bulletin boards etc.

### What is a bulletin board?

A bulletin board is a program run usually by enthusiasts which stores messages and files which you can swap. Depending on its size it will have areas of special interest such as Graphics, Music, Communications and Programming etc. It is from bulletin boards that a lot of public domain software is distributed; sadly viruses also get around in the same way.

Please be careful!!



## PACK

### DIAMOND DATACOMMS PACK

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## DIAMOND SPECIAL PRODUCT PAGE

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## SOFTWARE COMPANY SHAKEOUTS SIERRA ON-LINE AND BRODERBUND TO MERGE

Sierra On-Line and Broderbund Software have announced they are to merge. Sierra are well known for their entertainment software, especially the King's Quest and Space Quest series. Broderbund is a leading publisher of educational and productivity products, such as The Print Shop and the Carmen Sandiego series.

The consolidated company will be renamed Sierra-Broderbund, Inc. with a turnover exceeding \$70 million (about £40 million). Ken Williams, Sierra's boss will be Chairman, President and CEO of the consolidated company. Doug Carlston, Broderbund's Chairman and CEO, will be President of Broderbund, which becomes a wholly-owned subsidiary of

Sierra. According to Ken Williams, "This really is a 'merger of equals' in that, post consolidation, Broderbund and Sierra will exist as sister companies sharing a common distribution mechanism". Doug Carlston added, "The consumer software market can be thought of as being comprised of three major

categories: entertainment, productivity and education. Sierra is a market share leader in the entertainment market but does not participate, to any significant degree, in the other two segments, where Broderbund is a market share leader." Sierra On-Line Inc., recently established a subsidiary office in the U.K. as a launch pad for a drive into Europe.

## Howard Swallows the Turkey

Long time Amiga software company The Disc Company has made a surprising but successful raid on the erstwhile world Number One in entertainment software Activision. It captured 25% of Mediagenic, Activision's parent company, and forced a change of control of the company. Effectively, the Disc Company, led by Howard Marks and ex-Activision staffer Thomas Ormond, based in France, have as in some computerised business game, swallowed up Activision, the tottering giant,

and will now manage all its software operations. Rod Cousens, for some years a leading figure in the U.K. software industry, appears already to have bowed out of Activision U.K. of which he was boss and that now seems to have been rapidly disappeared. There are numerous rumours that Cousens is suing for the fulfilment of his lucrative contract, which he was once photographed waving cheerfully, to scotch rumours that he was leaving the ailing Activision. Activision is thought to have hit trouble because of an expensive lost lawsuit which cost it millions of dollars and by a series of software sales disasters including 'Howard the Duck' - or as it was called in the trade 'Howard the Turkey'.

## HEWSON SHOT DOWN

The software house led by Andrew Hewson, one of the most popular and longest lasting figures in the U.K. entertainment scene, has like an expected other 40,000 British companies this year of economic recession, hit trouble and gone into administrative receivership. Hewson, who has been writing and producing 'shoot-em-ups' since 1981, created such legendary arcade type successes as Paratrooper, Uridium and Stormlord. One of his major collaborators was ace programmer Andrew Braybrook whose desertion to the also now defunct Telecomsoft led to a legal

dispute between the then B.T. offshoot and Hewson. Telecomsoft were later to go the way of all flesh (I hope this is not a reference to their full figured M.D. Paula Byrne! Ed) were taken over by MicroProse, then run by Stewart Bell who now bosses Electronic Zoo. Yes, the software business is really a game of musical chairs! The fate of Hewson as a straight-down-the-line shoot-em-up company is an indication of the changes that have come about with the older, more sophisticated games audience which emerged with the 16 bit machines like the Amiga and that it is, as in all maturing industries, more difficult now for small companies to survive. Watch out for the shakeout of more companies...

## VIRUS? TELL THE YARD!

*U.K. figures are unclear because victims are frightened of publicity about computer crime causing a commercial backlash, but according to the head of Hoskyns' IT security division, Diana Billingham, the U.S. had 25,000 disruptive virus incidents last year and there is no reason to think that the U.K. and Europe do not suffer at least in proportion. So now Scotland Yard has appealed to the nation's virus hunters to help it collect evidence of computer*

*crime. Thirty-five virus researchers invited to a recent Scotland Yard conference, organised by London's Metropolitan police force's computer crime unit were asked to volunteer information about virus incidents nationally. "We would like incidents reported to us wherever they occur - the Met has some national responsibility for that," said Detective Constable Christopher Pierce of the crime*

*unit. "In order to ascertain the size of the problem it has to be reported. We would like to know when, where and how people are attacked. We are setting up a national strategy to tackle the problem and now we would like researchers and consultants in the field to do so too - it's a two-way thing". The police are concerned that many people remain unaware that virus-creating is a criminal offence under last year's Computer Misuse Act, carrying*

*penalties of up to five years imprisonment and/or an unlimited fine. "We've had quite a lot of publicity but there is no compulsion on anyone to report a crime," Pearce added, pointing out that the Act has led to more reported cases of computer crime than before. It is not generally a case though of vicious hackers or gangland organized computerised heists for the majority of the IT crimes committed are employee-related.*



## CUMANA'S CD-ROM SEXTUPLETS

A CD-ROM system comprising six optical drives has been produced by Cumana. The CDS-436 can be configured to run with one IBM PC compatible or a number of networked pcs and has an access time of 350ms.

Each drive includes an audio capability - useful for identifying the number of audio

## ROLLS ROYCE OF MICE?

The continuing boom in Amiga sales has resulted in Logitech - the Swiss based company who claim to be 'the world leader in computer input devices' - launching its first product for the machine. It comes in the form of LogiMouse Pilot for the Amiga - a two-button replacement mouse which features high tactile feedback and is claimed to be recognised as being "the best of its breed". Ergonomically designed for comfort and precise cursor movement, the mouse uses the opto-mechanical technology pioneered by Logitech.

LogiMouse Pilot is claimed to be at the same time be both more comfortable and more efficient than other standard mice. The hardware itself incorporates a self cleaning ball cage which keeps the mechanism free from lint and dust over miles of use. The LogiMouse Pilot's resolution and smooth running enables the user, say Logitech, to get more productivity from any application whether it be desktop publishing, spreadsheets, word processing, graphics or games. Guaranteed for two years.

LogiMouse Pilot for the Amiga will be priced at £27. "When people say 'A mouse is a mouse is a mouse', they couldn't be more wrong", says Simon Barnard, head of Logi UK, the British subsidiary of Logitech. "And as Amiga users will soon discover now that we have launched our first - but certainly not our last - product for the machine that has had such a major impact on the computer scene, our mice prove that there is a difference"



## CONTRIVER TO SAVE SPACE

In the so-called space efficient 'Age of the Microcomputer' where huge amounts of information can be stored on disk, one of the largest space consuming items is the computer printer and the yards and yards of paper it requires. Contriver now sell a Printer Pak which is aimed to contribute significantly to reducing clutter on a desk.

The Contriver Printer Pak consists of a printer stand which leaves room for paper, a cable and over 100 yards of computer paper.

Without the stand, say Contriver, that amount of paper would be awkward and look untidy. With the stand, it is both easy to handle and very convenient.

Contriver boss, Adolfo Giannini, commented 'Our Printer Pak is a must for anyone who uses a printer.' The Contriver Printer Pak retails for £19.99. They also sell a printer stand for £14.99.

Contact: Contriver, Unit 3, Buckingham Industrial Park, Buckingham, MK18 1UH. Tel: 0280 822803.



tracks, total playtime, the track currently being played, and the length of play. MTBF (Mean Time Between Failure) is 25000 hours.

The simplified disc loading system uses a cartridge (CD caddy) for easy handling and storage of the CD-ROM disc. Each disc cartridge ejection is achieved via three methods: automatic ejection via the host p.c.; manual ejection using the eject button; and emergency ejection via an access hole on the front panel.

The CDS-436 measures 340mm wide x 280mm deep x 190mm high and weighs about 16kg. retail price is around £3000 ex-VAT.



# Introducing Saxon Publisher & Draw 4D to the UK...

**Saxon Publisher** provides you with performance unparalleled by other DTP programs, with features so powerful and flexible that even the most complex documents can be created in a fraction of the time. A program that incorporates numerous advanced typesetting features not available anywhere else - at any price. Saxon Publisher will change your perceptions about what a truly professional DTP program should be...

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**SupraModem™ 2400** 100% Hayes™ - compatible 300, 1200, 2400 baud modem for virtually all computers. Compatible with all popular telecommunications software. £149.95

**SupraModem™ 2400 Plus** SupraModem 2400 with MNP5 & V.42bis error correction & data compression protocols. Allows transmissions up to 9600 bps. £199.95

**SupraModem™ 2400zi** Internal half-card modem for the Amiga 2000 & 3000. Installs easily in any Amiga bus slot. Supports

multiple modems on one computer. From £119.95

*All modems have a five year GUARANTEE*

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# CITIZEN'S PERFORMANCE LASER PRINTER

Citizen Europe have unveiled a new, powerful DTP laser printer - the ProScript 12 - a high performing Postscript compatible machine, capable, say Citizen, of handling the most complex of publishing tasks directly from the user's desktop.

The ProScript 12 supports a resident Postscript compatible board. Printing speeds are quoted at just over 11 pages per minute. A wide variety of built-in emulations including HP Laserjet 11, IBM Proprinter 11, Epson FX80, Diablo 630 and HPGL, allow the printer to be used in conjunction with almost all popular software. Standard parallel and serial interfaces provide hardware compatibility. The powerful Postscript



board, with 2.5Mb of on-board memory, promotes rapid processing speeds, freeing up valuable computer time. Results from a number of tests, claim Citizen, show that the board is almost twice as fast as many of its competitors. A choice of 35 resident fonts are offered including the

popular industry standards - Type 1 Adobe postscript downloadable fonts and Apple Laserwriter fonts. The ProScript 12 Plus retails at £2,695 excluding VAT, this price includes a one year on-site warranty covering all parts and labour. Contact: Citizen Europe Ltd. 0895 72621.

## NEWS

### BARNEY BEAR GOES CAMPING

Free Spirit Software has announced the release of Barney Bear Goes Camping - an educational game for children ages 2-6 for the Amiga. (1 Mb. required). Barney Bear Goes Camping has graphics especially designed for young children. The Amiga's built in speech is used to tell stories and give information about animals in the woods. While playing Barney Bear Goes Camping, the child can choose to play connect-the-dots, identify animal tracks, match animals with their shadows, help a squirrel through a variety of mazes or colour pictures in the full-featured colouring book.

A special feature of Barney Bear Goes Camping is the ability to create a slide show. During the game, Barney is carrying a camera with which up to 24 pictures of anything on the screen can be taken. After returning to the camp the child can watch a slide show of pictures which Barney and she/he took. Barney Bear Goes Camping is, say Free Spirit, the perfect program for young children. "They can understand what to do and how to do it. There is enough variety of activities to keep them coming back for more while they learn about the computer and nature". The suggested retail price is \$34.95. Other titles in the popular Barney Bear series include: Barney Bear Goes to School, Barney Bear Goes to the Farm and Barney Bear Goes to Space. Contact: Free Spirit Software, P.O. Box 128 - 58 Noble Street, Kutztown, P.A. 19530. Tel: (215) 683-5609.

## FREE OFF-PEAK ACCESS FOR MICRONET

From 1st April 1991, Micronet subscribers, including those using Amigas, have had unlimited free off-peak access to all Micronet and general Prestel information for the cost of a local telephone call.

With the introduction of the new tariff, Micronet users pay £30 for a quarterly subscription (unchanged for business users, previously £20 per quarter for residential customers) and 8p per minute for use of the service during the peak hours from 8am to 6pm, Monday to Saturdays. Access at all other times is free of any time-based charges. These costs apply to all information available on Micronet and Prestel with the exception of those areas which carry a premium charge. Kevin Smith, Micronet Marketing Manager explained: "I'm sure that our Micronet customers will be delighted with this change in the pricing structure. The majority are



residential customers for whom free off-peak usage - reintroduced in response to public demand - will mean a considerable decrease in costs. And our more canny users will notice how favour-

ably the costs compare against rival services, once usage goes past one hour per month." Contact: 0800 200 700. Customer Help Desk: 0442 237237.

## PROBLEMS AT 2AM?

**We have received information on the formation of a club for Amiga users with a 24 hour telephone helpline for all members. A year's membership costs £5. New members are supposed to be able to get the telephone helpline number with their membership number.**

**Members, say the organisers, can ring night or day and dis-**

**cuss their hardware or software problems with a team of 'Amiga experts'. (At that time of the night they may get some other problems to deal with too! "My wife says I should come to bed and stop playing with my Amiga...")**

**Send an SAE for details to Club Amiga, 5 Bowes Lea, Shiney Row, Houghton Le Spring, Tyne and Wear DH4 4PP.**



# Desktop Video Workbook

Microsearch say video is a popular and promising application for the Amiga's talents, but it is difficult to understand in some ways because the available source material is written in highly technical video jargon. So MicroSearch has announced the publication of the Amiga Desktop Video Workbook, by Jay Gross. This book puts in plain english the information you need to know, in order to understand - and do - desktop video on the Amiga. All the necessary topics are covered, including scripting, editing, pre-production processes, post-production, sound mixing, animation, budgeting and the skills involved in all of this, and more. In addition, the book includes extensive information and guidance for opening and operating your own video business. The Amiga Desktop Video Workbook takes a common-sense, largely non-acronymic approach to explaining the techniques, concepts and processes involved in video at every level of the business from home users 'just having fun' to serious professionals making their living in the industry.

MicroSearch recently announced the first affordable chroma key video adapter for the Amiga.

Jay Gross, a well known author, editor and reviewer in the Amiga market is a contributing editor of AVID, the video magazine specific to the Amiga, and has written extensively for many other Amiga publications in the U.S. and abroad, including **AUI**.

The Amiga Desktop Video Workbook, ISBN 1-879211-00-9, 240 pages, soft cover, with bound-in disk (AmigaDOS format) of video specific utilities and resources.

**Contact: MicroSearch: 9896  
S.W. Freeway, Houston TX  
77074, 713-988-2818.**

## NEWS

### MULTIMEDIA and CD-ROM On Show

*The first European Conference and Exhibition on Multimedia and CD-ROM will be held from September 9-11, 1991 in Wiesbaden, Germany. Pioneer Laser Technology will be demonstrating its six disc CD-ROM changer at CD-ROM Europe '91. Andrew Wilson, Information Systems Manager, reports a rapid development in the market for the changer, particularly in applications where sets of CD-ROM discs tend to be used - for example to store medical records and chemical data sheets, and in libraries where it is not desirable for users to handle the CD-ROM discs.*

**Ticket Hotline:** For tickets to the CD-ROM exhibition, for further information, or to reserve conference places, call the organisers, Agestream Ltd, on 0733 60535.

# Psst! Want an Oh Forty?

At the Amiga Show in New York (see page 51), the first 68040 boards began appearing. Motorola had been promising bulk deliveries of the most advanced Amiga chip for some time but has only recently been able to supply the growing demand. The first in the field to tout their wares are likely to be Progressive Peripherals, Supra, GVP, RCS and, unsurprisingly, Commodore.

The Progressive board has already been on show, though under glass to stop curious prying fingers, and is expected to hit the streets for about \$1000 (around £650 if the exchange rate holds up). The board is initially for the A3000 but is expected to move down to the A2000 before long. (If the A2000 with an 030 is an A25000, what will an 040 make the A2000, A3500?).

Supra say they aiming to get their boards for the A3000 and A2000 down below the \$1000 mark and should have their first on the market by mid-summer. And CSA are well-advanced toward a launch of their own, which is hardly surprising considering that they are known to carry out both research and customizing work for Motorola.

Further down the line is RCS who are going for the top of the market with a board starting either at 4 or 8 Meg - isn't 8 a nice figure to start with? - and expanding to a modest 32 meg. According to what we have heard the price today for a bog standard 68000 chip is just \$5 (And so why does Apple charge so much for the Macs?). The new 040 chips are being quoted at around \$600 a throw - but that is if you buy a 1000 at a time. One company who ought to be able to buy lumps like that is CBM themselves who, we hear, are already in possession of a fully functioning 68040 Amiga. Don't hold your breath till it is released though, they still want to sell the A3000 in bigger quantities than they have so far. (And they are not too happy with Newtek for releasing the wildly popular Video Toaster only for the A2000). What might appear before a fully-fledged A4000 is a Commodore 040 accelerator card which we believe that a recent visitor from the U.K. was shown. CBM refused to comment on a possible release date or price yet. Any bets on this year's Santa Claus bringing one if you send him a cheque, C/o West Chester, for £2000?

## NEW MONARCH WORKSTATION

Monarch's new low-cost workstation, designed to accommodate computer and printer in a minimum of space at moderate cost, is available from Action Computer Supplies at £87.80. Complete with side extension, top shelf and catch-basket, the recommended retail price is £146.60.

It has a bottom shelf for stationery, a sliding printer shelf that will hold a 132-column printer, and a 750x750mm main shelf for computer and keyboard.

Contact: Action Computer Supplies, Alperton House, Bridgewater Road, Wembley, Middlesex, HA0 1EH. Tel: 0800 333 333.





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### AG. GAMES

**AG.01 Star Trek:** Superb game based on TV series. Featuring superb digitised graphics and sound! (2D-MB-3 disks)  
**AG.02 Various:** Graywars, Jackland, Pacman, Othello, Empire, Hanoi...  
**AG.03 Star Trek (Agatronic):** Strategy game by Tobias Richter, Germanys No.1 Trekker! English version (2D-2 disks)  
**AG.04 Monopoly:** full version of the classic property trading game!  
**AG.05 Pacman 87:** Multi level version of this addictive arcade classic.  
**AG.06 Various:** Cosmoids, Amoeba, Crazy Eights, Blackjack, Backgammon, Daleks, Yahtzee, Stone Age, Ratmaze, Klondike, Keno...  
**AG.07 Board and Card games:** Cluedo, Othello, Klondike and Cribbage.  
**AG.09 Puzzle maker:** Jigsaw puzzles from IFF files. Plus Puzzle Pro.  
**AG.10 Space Invaders:** Arcade Classic version! Plus: Lander, Amoeba.  
**AG.11 Tennis:** excellent shareware sports simulation. (MB)  
**AG.14 Flascheiber:** Boulderdash style game. Almost Commercial quality!  
**AG.15 Paranoid game:** Arkanoid style, including a screen designer.  
**AG.16 Castle of Doom:** Adventure game with graphics - beginners level.  
**AG.17 ST Bash:** Superb Space Invaders inspired shoot-em-up where the aliens are Atari ST related sprites!  
**AG.18 Golden Fleece:** Superb Infocom standard adventure. Train; design a railway with 2 trains! Tron; 2 Player Light cycle game. Plus: Star Fleet, Kamikaze Chess, Tumbling Tots...  
**AG.22 Return to Earth:** Elite style Space trading game with excellent graphics and digitised sound.  
**AG.24 Drip:** Arcade quality game with digitised sounds and smooth sprites! Plus: China Challenge, Super Gridder, Frogger, Air Traffic Control sim., Mutant, Ping Pong.  
**AG.26 Zerg:** Ultima style Role Play. Plus: World: Infocom type adventure. Daleks, Callisto, Puz, Pontoon...  
**AG.27 Star Trek (USA):** Space strategy game. Captain the USS Enterprise and repel Klingon attacks! (2D-MB-2 disks)  
**AG.28 Quattro:** Tetris style. China Challenge; Mah Jong based puzzle game Breaker, Breakout style with screen designer. Plus Asteroids version.  
**AG.29 Chess:** Superb Multi Featured version with variable level of play; Tiles; unusual Shanghai version. Battleships; great implementation of the classic pencil and paper game. Tetris Two; 2 player game.

### AH. HELP

**AH.01 Adventure Game Solutions:** More than 100 including: Dungeon Master, Future Wars, Ultima 1 to 5, Sierra, Infocom, Bards Tale, Zak MacKracken, Maniac Mansion, Rainbird... Every Adventure players Dream! (2 disks)

### AU. UTILITIES

**AU.01 Jazzbench:** Workbench upgrade with many indispensable features! Includes: Show hidden files, Show as Text, Show devices, Alphabetise...  
**AU.02 UEdit:** Excellent file editor, a vast improvement on Ed!  
**AU.03 QL Emulator:** plus 2 data disks packed with files. Superb! (3 disks)  
**AU.04 Amiga Spell:** Spelling checker, compatible with most Word Processors.  
**AU.08 Various:** Starchart: 600 stars & galaxies. TXED: editor/word processor. Persmail: personal file manager.  
**AU.09 Midi Tools:** Midi Keyboard. Five octave, mouse operated keyboard. Progchange: change Midi channels etc.  
**AU.10 Graphic utilities:** Fontfixer, IFF Converter, Palette Converter... Boot utilities: Boottext, Bootup Plus: Memcheck, Disksalv, Draggpack.  
**AU.11 Starchart:** Astronomy program giving positions and movements of all major constellations!  
**AU.13 Visicalc:** Superb full featured Spreadsheet with manual on disk.  
**AU.14 Various:** Amicat, cataloguing system. Icontype: change Icon type. Recoverable RAMdisk, Spell Checker, Black Book: memo pad. DX Synth voice library. Classic Cave Adventure.  
**AU.15 Dope Info maker:** Create Demos with this user friendly package.  
**AU.17 D Copy:** Excellent disk copier, similar to the full priced X Copy. very effective in Nibble mode!  
**AU.18 North C:** Complete C Environment for the Amiga! Amazing value!  
**AU.19 SID:** Workbench replacement with easy file handling, improved DMouse window control and many more features.  
**AU.20 K.O. The Virus Virus detectors and killers!** Includes: Virus X 4.1, Berserker, BBChampion, Red Alert.  
**AU.21 Avoiding CLT:** lots of useful utilities otherwise only obtainable through CLT. FixDisk, QuickCopy, PopDir, DiskUpd...

### AC. CLIP ART

**AC.01 Deluxe Paint:** lots of quality pictures in low, medium & high rez.  
**AC.02 Pagesetter Art:** Animals, Food, Computers, Fantasy, Holidays, Music, People, Patterns... 100s of pictures.  
**AC.04 IFF Alphabets:** 30+ screens of professional quality character sets plus marble and wood surfaces. Ideal for Headings, Logos, Titling...  
**AC.05 Animals:** Anatomy, Buildings, Christmas, Construction...  
**AC.06 Cartoons:** Comic pictures of People, Animals, Funny objects.  
**AC.07 Holidays:** Home, Flags, Flowers, Miscellaneous...  
**AC.08 Music:** People, Places, School, Religion, Symbols, Weddings...  
**AC.09 Signs:** Titles, Logos, Headings, Sports, Athletics, Bowling, Boxing, Cricket, Racing, Football, Fishing, Horses, Skiing.  
**AC.10 Teddy Bears:** Cute pictures - ideal for Present Labels, Greetings Cards or just for fun... Silhouettes; Lots of Shadow pictures.  
**AC.11 Nightclub:** Clowns, Dancing, Vintage Cars, Bikes, Boats, Office, Computers, Industrial...  
**AC.12 Colour:** Occasions, Transport, Signs, Electrical, Architecture...

### SND. SOUNDTRACKER etc

**SND.01 Soundtracker:** Four versions of this favourite Music creation program.  
**SND.02 Soundtracker 4:** alternative version + instruments disk. (2 disks)  
**SND.03 Sound Monitor:** 20 Demo scores + instructions in this superb sound package! Extra RAM and Drive useful. Plus: Soundtracker file converter! Plus: Instruments disk. (2 disks)  
**SND.04 MED Music Editor:** Soundtracker style music creator! Easy to use!  
**STI.01 to STI.08 Instrument samples:** for Soundtracker or compatibles. 8 Disks packed with 100's of digitised samples! Buy any one disk or all 8 for only £9.99.  
**STS.01 Sampled Sound:** effects to use instead of instruments!  
**STS.02 Longer samples:** many from films, Star Wars, 2001, Raiders...

### AE. EDUCATIONAL

**AE.01 Blackboard Maths:** Concentration Colourpad, Cat & Mouse, Galactic Worm Animated Pointers, Shark... (Age 5+)  
**AE.02 Spellquiz:** Wheel of fortune, Tug o'War, Flower Garden, Stepping Stones, Maths test, Puppypix (Age 5+)  
**AE.03 Fractals:** Desktop Calculator, Function plotter, Evolution (Age 11+)  
**AE.04 Gravitywell:** Weatherman, Gravsim, Airfoil... (Age 11+)  
**AE.05 World data Bank:** CIA world map with political boundaries, view from anywhere, any height! Plus: 3D Plot, Calendar Factory, Sherlock (Age 11+)  
**AE.06 Talking Spelling Tutor:** Speech Toy, German Language test, Study File Card System, Globe, Elements, Geotime, Text utilities (2 disks) (Age 11+)  
**AE.07 Educational graphics:** Technical illustrations: Art, Biology, Geology, Astronomy... some animated like a pumping heart in Biology section. Includes viewing programs. Or load into Deluxe Paint etc. (Age 9+)

### AP. FONTS

**AP.01 Cosmopolitan:** Rangers, Peignot, Avant Garde, Aldus, Celtic etc...  
**AP.02 Fancy:** Hollywood, Park Avenue, Broadway, Camelot, Courier, Ham...  
**AP.03 Publishers:** Helvetica, Akashi, Andover, Bookman, Boxie, Times...  
**AP.04 Various:** Unusual, Videofonts, Large and Small fonts... Plus: Various fonts Utilities etc...

### AW. WORKBENCH

**AW.03 Icons:** Music, Ram, Naughty, Jet Icons. Plus: Utilities, Colourbench.  
**AW.04 Icon Development:** Design your own icons with Deluxe Paint! Example Icons included. Showpic, Slideshow.

### AS. SLIDESHOWS

**AS.01 Boris Vallejo 1:** Professional quality graphics in interlaced HAM!  
**AS.03 Forgotten Realms:** 13 digitised pictures with a fantasy theme.  
**AS.05 Exodus Real 3D show:** 9 very impressive Ray traced pictures.  
**AS.06 Swimsuits:** Great pictures from the U.S. Sports Illustrated mag.  
**AS.12 M.C. Escher:** Animated slideshow of Eschers paradoxical artwork.  
**AS.17 Agatronic 4:** 16 Ray Traced pics including one of the USS Enterprise that took 38 hours to render!

### AD. DEMOS

**AD.01 Walker 1:** Digitised Animation of Star Wars Imperial Walker (MB)  
**AD.02 Walker 2:** Digitised animation of Walker and helicopter! (MB)  
**AD.04 Probe Sequence:** Incoming video pictures from an interstellar probe landing on an alien planet! Amazing!  
**AD.12 Boing Machine:** It's Ray Traced, it's incredible, it's impossible...  
**AD.13 Walking Cat:** Amazing Revolving digitised animation of walking cat!  
**AD.16 Ghost Pool:** Stunning animation of a playerless Pool game...  
**AD.18 Puggs in Space:** extremely funny cartoon involving an alien creature landing on Earth and exploring!  
**AD.21 Busy Bee:** Amazing Sculpt 3D animation of a large flying Bee! (MB)  
**AD.22 Democreators:** Create your own demo's with: Bootwriter, Bootmaker, Bootboy, Boot generator etc...  
**AD.23 Ship and Sphere:** Super smooth Ray Traced film of space ship flying round a glass ball. Masterpiece! (MB)  
**AD.24 NewTek Demo Reel 3:** Incredible demo of NewTek range featuring some of the best sampled sounds, digitised pictures and animations you will see anywhere! Stunning!!! (MB-2 disks)  
**AD.25 The Run:** Outrun style 3D film of a Lotus weaving through motorway traffic with police car chasing (MB)  
**AD.26 Starline Mega:** Smooth Hi-res full screen scrolling pics, Crystal Clear Hi-Fi sound samples, Enormous scrolling text - Highly Recommended!  
**AD.28 Stamp Collector:** Amusing film involving a ghostly magnifying glass examining some naughty stamps!  
**AD.29 Predators Megademo:** Brilliant demos including some truly amazing animation and 2 games! (2 disks)  
**AD.32 Vision Megademo IV:** Superb Digitised music and sound effects plus large graphics. Brilliant!  
**AD.35 Robert the Mercenary:** Amusing animation sequence including a game where you can shoot some aliens!  
**AD.36 Kefrens Megademo VIII:** 10 demos including: Kill the Beast (Shadow of the Beast meets Xenon 2), Walkman, Kill Victor, Vectorman... (2 disks)  
**AD.37 Gymnast demo:** Ray traced animation of a Gymnast performing a high bar routine. Recommended!  
**AD.39 Agatronic animations:** 3D film of the USS Enterprise attacking USS Reliant. Plus walking Robot.  
**AD.40 Luxor Teenager:** Variation on this classic involving 2 anglepoise lamps and a large red ball!  
**AD.41 RGB:** Badgkiller competition winner! Produced with Director! (MB)  
**AD.42 Comic on a Disk:** Whole graphic novel, page by page, on screen!  
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# Graphical Goodies

## HAM E

Two new and interesting developments have appeared on the Amiga graphic scene: Black Belt Systems' HAM E and Impulse's Firecracker 24.

Black Belt's HAM E is a frame buffer that lets you colour cycle 256 colours out of a palette of a mere 16 million or so or have on screen 262,000 without the benefit of colour cycling. It outputs RGB and takes files in an IFF-24 format which it then renders in its own HAM E mode. For such a sophisticated and professional level device the price seems very modest indeed, just \$300 - about £180.

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## Firecracker

Impulse, creators of the widely-admired Turbo Silver and its more recent successor, the 3D program Imagine, have brought out Firecracker 24. It is a board that fits into the expansion slot of an A2000 or 3000, displaying 24 bits of colour. It outputs in RGB and can share an RGB monitor with the output from the computer to view the 24 bit files. It will take files in IFF24 - the fashionable standard today - or in Impulse's own creation, RGBN format.

**Contact: Impulse Inc.**  
6870 Shingle Creek Parkway, 112,  
Minneapolis, MN55430  
Tel:612/566 0221

# NEWS

The issue became public when NCR was barred from installing its Wavelan clan in the UK because the frequencies it used were almost

## CLANS UK OK

Cordless lams, or clans as the DTI calls them, have been approved and used in North America for the last three years, but disagreement by European public telephone operators (PTOs) over allocation of frequency bandwidths has delayed the technology in the UK.

identical to those allocated to the Vodafone cellphone operation.

Now the government has given a provisional go-ahead for the development of radio-based local area networks that could form the basis of a European standard.

According to a Department of Trade and Industry spokesman, companies are now free to develop and test wireless lams based on spread spectrum technology (SST) using frequencies between 2.412 and 2.438 GHz. "I must stress that these lams are still not legal to use" says the DTI spokesman, adding that there is sufficient demand from suppliers and users, however, to look at promoting a standard. Among the other specifications put forward by the DTI are that the maximum power output should be no greater than 250 milliwatts and that the eventual legal radio lams will not require licences.



*Rent a computer with CD - but don't mention the name "Amiga"*

A sign of the times in the growth of CD Rom is the announcement of the first European Conference and Exhibition on Multimedia and CD ROM to be held in Weisbaden in Germany on September 9-11. Nearer home there is a half day tutorial for newcomers to CD Rom and related technologies called "Beginners Guide to CD ROM" which is to be held at the CD ROM Europe Show '91 at the Novotel Hotel in Hammersmith, London on 21-23 May. The organisers say the U.K. Show and Conference will be a highlight in the filling calendar of the European CD ROM scene and the burgeoning multimedia industry. The event will focus on developments in the business, education and consumer markets. Speakers will include representatives from Intel, Phillips, Sun Systems and Commodore with emphasis on the CDTV.

In the U.S.A. at a Conference sponsored by Microsoft there has been an attempt to create a single standard for Multimedia on the PCs, based not surprisingly on Microsoft's Windows GUI products. Also announced was a CD drive from Tandy at \$399 - a little less than £200, which is the cheapest so far anywhere.

Commodore's plans for the launching of the CDTV - the Amiga packaged with a CD to

## CD ROM Growing

look like a videorecorder - seem now to centre on the idea of the major High Street chains of TV rentals taking it on and offering it for hire at about £20 per month. CBM have expressed the view that when the first videorecorders came in, it was the chance of renting them that created the market where people later went out and bought them in large numbers. Commodore hopes the same process can be built into the market for the CDTV, which to avoid "technofear" will never be promoted as anything like a computer and even the word "Amiga" will be forbidden. But as someone said "You can fool some of the people some of the time..."

Another interesting sidelight on Commodore's technological viewpoint, this time a more open one, is a recent agreement it signed with the high quality Japanese electronic company, Pioneer (sophisticated car radio thieves will take nothing less). Commodore has come to an agreement for Pioneer to supply masters and copies of videodisks for use with Amigas. This is to enable developers who use Commodore's Amigavision authoring system to reduce the time needed to produce mastercopies of videodisks. It will also lessen the cost of bringing the Amiga



closer to the increasingly-used disk technology in multimedia - and hedges CBM's bets on simple CD. Pioneer also conveniently manufactures videodisk drives and doubtless CBM can find a use for them too. The sales of CD Rom drives are rising with vertiginous speed. From 6,500 in 1986, sales are predicted to reach more than 6 million a year by 1992. And CD ROM titles available will rise from a mere 50 or so in 1986 to over 10,000 by next year. The sales of CD ROMs will have increased from just 9,000 in 1986 to 8 million in 1992. According to John Metcalf, Market Development Manager for Nimbus Information Systems' CD ROM Division, "The market for CD ROM technology is exploding!" (Which does sound dangerous, doesn't it?) "CD ROM is becoming the dNeN NiNaNcNtNoN standard for electronic publishing and CD ROM drives are going to become just as much a part of computers as floppy disks are now." He ought to know as Nimbus are the U.K.'s biggest manufacturers of CDs. By the way, the CD of Commodore's CDTV does not mean compact disc. It stands for Commodore Dynamic - and the TV does not mean what anyone might think but Total Vision. Then, of course, you already knew that, didn't you?



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# TRUE TO LIFE PROGRAM ?

With the coming of Neural networks, expert systems, evolver software that mutates according to Darwinian principles and even computer viruses that attempt to mimic living things, should computer programs really be considered 'alive'?

Programs are being created to make artificial life which aims to replicate lifelike behaviour on computer screens in the hope of predicting human behaviour or uncovering what motivates us and other living things.

Recently some scientists have begun to ask if computer viruses, self-replicating organisms, are themselves not a form of artificial life. But others deny that computer viruses evolve at all.

Artificial life supporters want their creations to mutate or adapt - and more. Evolver software, for example, generates solutions to a problem and then selects the best, based on a survival-of-the-fit-

test theory.

A company called 'Thinking Machines' has taken the idea one step further with a number-sorting program which becomes progressively better at solving problems. Scientists at IBM's Thomas J Watson Research Center in Yorktown Heights, New York, were astonished to discover last year that a computer simulation of human brain waves began giving off waves of its own. We are not surprised at that sort of thing. At least one of our Amiga's doesn't like to work too early in the morning. (*What does that mean, 10 o'clock?* Ed.)

Sintar Software, a Seattle Washington software publisher is now selling a cellular automata program called Cellmaster, which allows you to set the rules that govern the lives of paramecium-like creatures and jellyfish. You don't want a program to control jellyfish? Well, it's a beginning, isn't it?



## SIMPATICA INTO 24 BITS

Simpatica, the single frame editing and rendering system for the Amiga, now supports the Amiga Centre Scotland's 'Harlequin' and G2 Systems' 'Masterboard VD2001' 24 Bit Frame Buffers.

Simpatica users will now be able to load 24 bit files with 16 million colours and compile lengthy animation sequences using cut, paste, variable frame dwells, and preview the sequence before downloading to professional video automatically. This new release

of software will be supplied free of charge to existing users.

Artbeat's future plans include further support for popular 24 Bit Frame Buffers. They believe that the Amiga is now attacking the top end market in professional computer graphics systems at a significantly reduced cost and that Simpatica will aid this process.

Simpatica costs £1750 + VAT. Contact: Artbeat Computer Graphics. Tel: (0268) 289384.

# NEWS

## NEW HORIZONS' DESIGNWORKS

New Horizons creators of Prowrite and Quickwrite and one of the longest established and most respected software companies involved with the Amiga have come up with another program that will fill a gap in the computer's armoury. Designworks is high performance structured drawing program which is intended to provide a fast yet easy-to-use tool for all types of drawing and design requirements. Designworks contains three 'tool' windows: The Toolbox, The Pen Palette and The Fill Palette. The Toolbox offers a whole range of utilities that are controlled with a simple click on. They vary from selecting, moving, resizing or reshaping objects; entering text and creating text objects - which can have fill patterns to tools for immediately creating rectangles, ovals, horizontals, verticals or polygons. The Pen Palette is used to change the pen colour for selected or new objects. It too is executed through a simple click on a colour in the palette. The Fill Palette - surprise,

surprise - works the same way. You mouse click on whichever fill you require from the fill palette provided. Designworks will allow the importation of IFF pictures into documents or the saving of objects as IFF files. However, New Horizons tell us that this feature is a tough one to develop fully and will probably be the last to be included in the program. There is a comprehensive Edit menu including such tools as the ability to rotate objects or scale them both horizontally and vertically in 1% increments. And you can take a line, an oval or a rectangle and convert, with a single click, into a polygon which can then be reshaped or smoothed. Designworks has an AREXX port and can implement several AREXX macro commands. It also tracks all colours and patterns as full 12 bit RGB values. When objects are displayed, a translation is made to the closest available screen colour. Designworks should reach the U.S. market in early Summer and Europe shortly after.

## QUOTE OF THE MONTH

**from Douglas Engelbart - inventor of the computer mouse:**

**"How do you ever think of anything different? When it comes to picking something off the screen, a keyboard is a very clumsy way. How many characters, with the best scheme you can think of, do you have to type in order to designate what it is on the screen you'd like to pick or steer with the cursor? We just thought we'd try all the**

**different ideas we could think of." Seven years later, in 1970, Engelbart received a patent for the mouse and assigned the rights to the Stanford Research Institute. When you think just how different a mouse is from a keyboard, you realise how much lateral thinking they did.**



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## AMIGA A500 SOLDERLESS RAM UPGRADES



**512K RAM/CLOCK  
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### 512K RAM/CLOCK EXPANSION FEATURES:

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N.B.: The expansion board requires Kickstart 1.3 to operate - Kickstart 1.3 upgrade available from us for £29.95



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512K Upgrade ... £ 31.95  
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We currently support specially upgraded versions of the A590 incorporating NEC high capacity, fully autparking SCSI drives (25ms access time). SCSI interfaced hard drives offer a substantial performance increase over conventional units.

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**The LT20 is designed to fit neatly underneath any notebook, laptop or portable computer. Weighing just 5.9lbs, the printer can be transported between**

**meetings or between customer visits. The retail cost of the printer is £369 ex VAT.**

**Printing at speeds of 180 cps in draft mode and 60cps in LQ, the LT20 can output documents, reports or letters. Multipart stationery, standard A4 sheets or letterheads can be handled through the printers flat bed paper path, which is intended to eliminate paper jamming.**

**The LT20 also conserves space with a built-in cut sheet feeder, enabling 50 sheets to be stacked ready for printing.**

**Seikosha Tel: 0753 685873**

We have reported before on the battle between Intel, the creators of the 86 range of chips and AMD who, licensed by Intel to build the successful 286, then went on to develop their own version of the powerful and now ever increasingly the industry standard 386. Intel were by no means delighted at this turn of events and tried all legal means to keep AMD out of the 386 field. They even went to the length of badmouthing their own 286 chips as out of date - AMD were still producing them - and launching, probably before it was needed, a 486 chip, and spreading tales of a 586 to come.

As Intel dominate the MSDOS PC market, supplying virtually all of the manufacturers from IBM down, the major PC companies are not unhappy to see a chip manufacturer like AMD come in and break Intel's monopoly position. IBM were so worried at the situation that at one time they even bought shares in Intel. Intel found out about AMD's plans in the 386 field by a very fortunate accident in which one of their employees called Mike Wallace by pure coincidence, of course, checked into a hotel in which another Mike Wallace, a senior employee of AMD was also staying. The fortunate, for Intel, accident took place when secret papers, in-

tended for AMD's Mike Wallace were delivered to Intel's Mike Wallace and naturally enough he opened them - and read all about AMD's project. Now wasn't that an amazing coincidence?

After a protracted legal case, AMD recently won the right to manufacture the 386 chip - though Intel have rushed out a cheaper cut down version which bears an odd resemblance to their 486.

Now another unfortunate occurrence, for AMD, has taken place. According to AMD, a lone gunman held up a truck travelling through Malaysia, where samples of the new AMD386 were being produced, and stole a quantity of the new chips. As there were other electronic goods on board which the robber completely ignored, he clearly knew what he was doing. The heist man even left a quantity of 386 chips with slower clock speeds in favour of the latest developed, AMD stoically used to such unfortunate accidents have refused to suggest their rival, Intel, was in any way involved. But they have reiterated their determination to bring their latest and fastest 386 chips onto the market ASAP.

286...386...486...586... This James Bondian chip saga could run and run.

## MADRIGAL'S CAR CLIPS

Madrigal Designs have released the Madrigal Automotive Construction Set (General Collection). This is the first in a series of automobile clip art collections that Madrigal intends as a bridge between productivity and game aspects of computing, providing auto enthusiasts, artists, animators and graphics designers with an interactive clip art design system for use with paint, desk top publishing and video animation programs.

The General Collection contains four disks of scaled IFF screens, as well as related statistical and historical informa-

tion files. This collection consists of automobiles from the United States, Europe and Asia. The types of automobiles represented in the collection are: saloons, sports cars, coupes, estate cars, hatch backs, pick up trucks, long haul trucks, and vans. Antique and collector cars are also included. All are shown in side view and cross section displaying engines, transmissions, seats, driver passenger arrangements, and tyres. Many of the screens also contain front and rear views.

The system is designed to give the user the power and



flexibility easily to examine design options and manipulate readymade automotive design components on screen, modifying existing car designs or creating new ones.

The suggested retail price for the General Collection is \$49.95. **Contact: Madrigal Designs, P.O. Box 2292, Santa Rosa, California 95405. Tel: 1-707-539-5675.**





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225 cps	5 Resident LQ fonts	5 Resident LQ fonts
5 Resident NLQ fonts	Accepts font cartridges	Accepts font cartridges
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*Amiga Format magazine review,  
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*Amiga Computing - October 1990*

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*Highly recommended - Amiga Computing October 1990*

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# AmiExpo 1991

Up pops Mike Nelson with a toast to Newtek's best thing for sliced bread and other U.S. goodies!

**W**ell, that takes care of almost all the corny jokes which can be levied against the undoubted recent AmiExpo show held in the New York Hilton. Yes, of course it is the Video Toaster, that \$1595 bundle of video trickery which is blazing a relentless trail from a quiet town in Kansas called Topeka to every corner of the United States. The undeniable effect of the Toaster as a single product is augmented by the knock-on influence on other parts of industry, not necessarily directly relating to computers. It was particularly significant to see companies such as JVC and NEC both demonstrating their professional video gear in support of the Toaster. Everybody is getting in on the act, and I will be looking more closely at allied products later in this report. NewTek kicked off the show with a series of demonstrations of the Toaster to a select audience. I was invited in to get the details for AUI, and we previewed the RockStar Todd Rundgren's new video, about to be released in America. Apparently, Todd is a Macintosh fan (the computer, that is), but was so taken by the Toaster and its LightWave 3D software at MacWorld (Yes, the Amiga dedicated Mac show), that he bought one to mess around with. Six weeks later he had produced his entire video (some 7200 frames), called "Change myself", having used virtually every effect in the Toaster's considerable repertoire and saved himself around \$2,000,000 and 5 months for his trouble. He did need a little help near the deadline with about 10 more Toasters to complete the rendering, but he obviously has no problem with power points at his house. Another surprise from NewTek at the show was a visit from one of their other famous Toaster users. Penn Jillette is one half of an American comedy/magic duo (Penn & Teller, in fact) who have also made a video using the Toaster. Although this act is not so well-known over this side of the Atlantic, Americans are lucky to experience their off-beat approach to magic with a razor-sharp wit. Penn explained how much

fun the Toaster was for amateurs, and "was much better than going to see one of those musicals from English wimps!" Anyway the title of this masterpiece is "Video Toaster Etiquette", and is supposed to be a paragon of good taste in not overdoing the special effects side of things, where sadly it teaches by example with very amusing consequences. NewTek were saving the most useful information until after all the frivolities, and announced

**"Running at 25 MHz, it should be up to five times quicker than 68030, or to put this into perspective, some 25-30 times quicker than a standard Amiga!"**

that they were continuing to upgrade the specifications and that new software and hardware modules were under development. One of these was described as a time buffer, and was demonstrated by NewTek's Kiki Stockhammer, winner of the "Who can wear the shortest skirt"

competition for three days on the trot, and who was pictured dancing to the INXS track "Suicide Blonde". The delay effects generated by the Toaster cloned her into multiple images (even nicer than just one Kiki). Another significant announcement from NewTek is that they will be releasing details of the Toaster's internal workings so that other developers can produce add-ons in both the software and hardware. Unfortunately, they also confirmed that it will be at least another year before a PAL version suitable for use in Europe is available. The PAL protocol is more demanding than NTSC, requiring more memory and a considerable re-write of the 350,000 lines of machine code. With all of NewTek's other plans, it is quite conceivable that we will have to wait longer than this, especially since the market in Europe lags behind that in the States by a few years.

## Hardware

You may be getting the idea that there was nothing else at the show other than the Toaster. This is definitely not the ►



Newtek had the Toaster, Lightware and Kiki 'Miniskirt' Stockhammer.



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# AmiExpo 1991

► case, as the Americans are now moving towards upgrading their hardware in almost every department. Hard disks are becoming faster, storing more information in an ever-decreasing space. Technology has reached the point where an internal drive for the A500 is now feasible. The ICD Novia 20i is a 20 Mb drive which plugs into the processor socket of the A500, and a 60 Mb option will soon be available. Up to three times faster than Commodore's A590, the Novia

**"The user can put together a presentation and the Amiga will do the work of the projectionist, sound guy and all the roadies!"**

sells for \$659, and this technology paves the way for a truly portable Amiga. Indeed, many at the show felt this possibility will eventually become reality once a few technical hurdles like the high power demands of the custom chips (particularly Angus) are overcome. Memory upgrades are overcome.

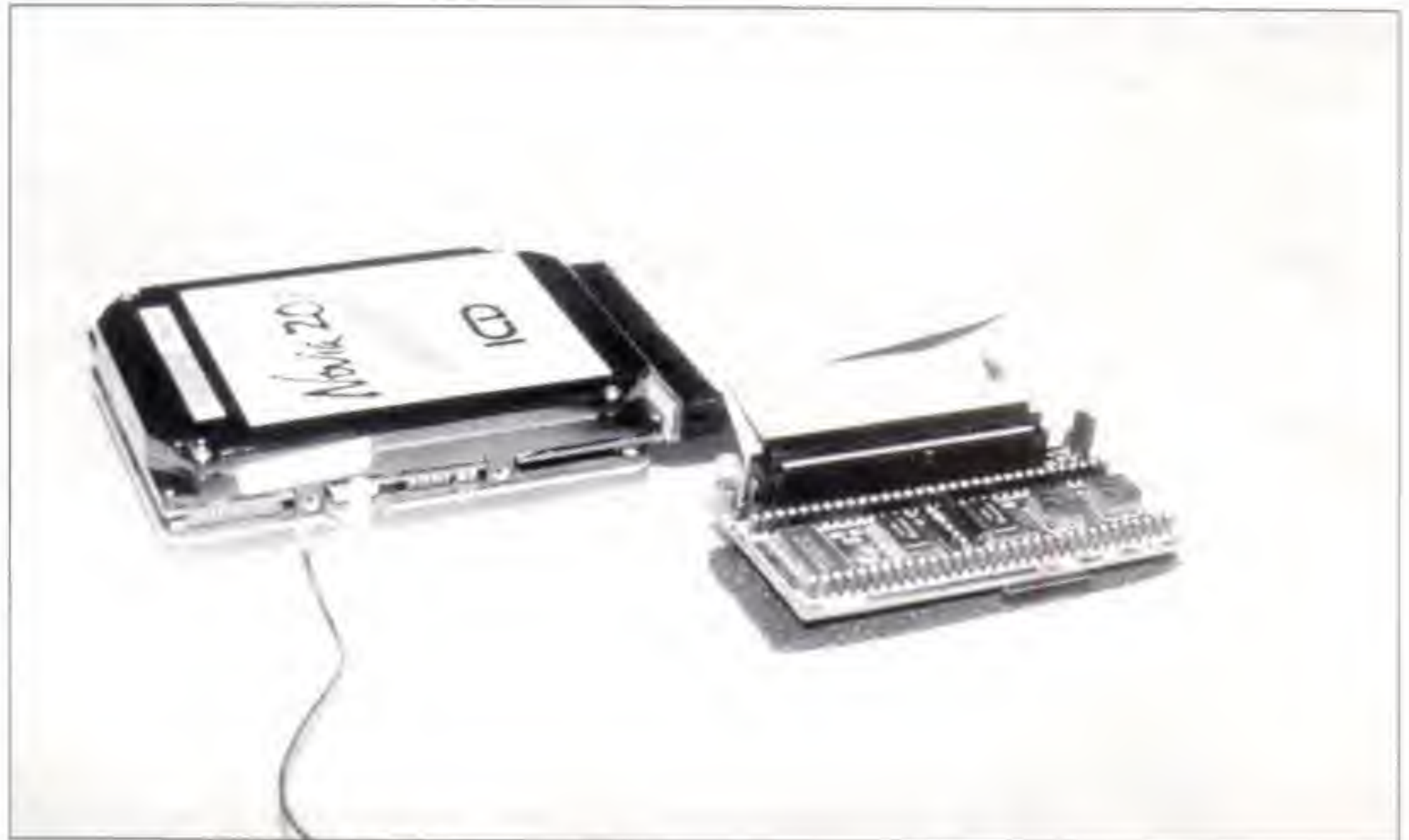
Memory upgrades are coming through thick and fast, especially coupled with accelerator boards like the Mega Midget Racer we reviewed in April '91's AUI. Indeed, CSA were proudly showing off the prototype of their latest product, the 40/4 Magnum! Dirty Harry himself would be scared of the power packed by this A2000 add-on, as it contains Motorola's newest processor, the 68040 with a staggering 16 Mb of 32-bit memory on board. Running at 25 MHz, it should be up to five times quicker than 68030, or to put this into perspective, some 25-30 times quicker than a standard Amiga! CSA also claim that this board will be expandable up to a thumping 64 Mb of RAM using bigger chips in the near future! It really makes you think long ago, the Commodore 64 was at the front line of technology, and less than a decade on, we have increased processing potential by a factor of 1000. Pretty soon, we will have to get a monitor six feet wide just so that Workbench can display the amount of free memory! A number of add-ons for

the 1750 board were mentioned, including an ultra-fast SCSI, capable of dealing with 5 Mb of data per second. This is much faster than current hard drives can manage, but CSA expect them to catch up in a few years. Shipping is expected to commence sometime in May, and naturally AUI will take a good look at this little toy which is obviously aimed at the Toaster market, so that the 3D-rendering can be done almost in real time! On the subject of accelerator cards, Great Valley Products took the honours for the fastest board actually working, with their A3050. This zooms along at a speedy 50 MHz and can accept up to 32 Megabytes of RAM for those who want to have a dozen copies of Professional Page in memory at once. Actually this is again designed to complement the Toaster and the awesome requirements of 24-bit graphics, a subject that demands some comment. Yes, there comes a time when five bit planes (32 colours) are not enough and so you resort to HAM to sneak in some extra colours. The problem with HAM is that it was never really meant for displaying anything seriously; it's more of a design experiment which got left in, and as such suffers from a few problems. The ray-traced pictures we are used to

seeing are indeed breathtaking, and HAM certainly gives the Amiga unrivalled graphics. PC and Mac users can purchase graphics boards which provide for 24 bit planes, allowing a monstrous 16.8 million colours to choose from. Until recently, this option has been largely unavailable to the average Amiga user, but there is currently a choice in the US of several 24-bit colour cards. The first of these is the DCTV (nothing to do with misspelling CDTV), standing for Digital Composite Television. It only works with NTSC at the moment, and for only \$495 (about £300), you can paint, animate and

**"In the pipeline is "HotLinks", a fast word processor and bitmap editor (for normal graphics), which will be able to speak directly to PageStream"**

digitize in full 24-bit colour, and the results are absolutely stunning. The impact of these displays is remarkable - just like when the first pictures generated by Digiview appeared soon after the Amiga was launched. Are us PAL users going to the dogs? (Or dog foods?) No. ►



ICD's Novia - In Spanish, Amiga is 'girlfriend' but 'Novia' means fiancée.



## AmiExpo 1991

Memory and Storage Technology, better known as MAST, have released Colour Burst, their own 24-bit colour box, with a paint program to match. Again, the results are pretty spectacular, but how can Amiga users benefit from this high resolution? The answer lies in the IFF-24 format which is generated by most of the popular 3D rendering programs, so instead of a miring your 4096 colour masterpiece, you can load the full 16.8 million version into Colour Burst. Naturally this kind of high resolution is going to

publication. Aside from the Toaster, the Amiga is still a force to be reckoned with as the amazing demonstration by IVS (makers of the Trump Card hard drives). They were able to show a five minute sequence of Back to the Future III, in full 24-bit colour (using DCTV, in fact) with a superb CD-quality 16-bit stereo sound track. The overall effect was stunning, with no hint at all that you were watching a display generated entirely by a computer. Commodore's own Amigavision package was the only soft-

all on one board. SoundThere is nothing more satisfying than that deep, thunderous explosion as an alien starship explodes, or the fizz of a Sidewinder as it signals a depressing end to the day for a Mig-29 and Sampled sounds have been dealt with in several previous issues, and the specification of the Amiga, impressive as it is, does not meet with the demands of modern musicians (or particularly keen alien blasters), as it is 8 bits short of the CD standard of 16. Also the DMA hardware can only manage some 28,000 samples per second, well short of the 44,100 target for CD (and annoyingly, 48,000 for DAT, but who uses it, anyway?). Amiga users are lucky that developers are now designing add-on boards which plug into A2000s that will match, or even surpass, these requirements. SunRize Industries, makers of the famous Perfect Sound (to be reviewed next month with its new software), are first in the queue with a 12-bit board, and also have a full 16-bit option

**"There is undoubtedly much more left to surprise us in Commodore's big baby"**

take up vastly more memory (and rendering times, so get an '030) and to this end, MAST have incorporated 1.5 Mb of RAM into the Colour Burst box. All you need then is any 1 Mb Amiga (preferably 3, though), and a 1084 monitor (or a multi-sync) to get going. Colour Burst also contains hardware to scroll the new screens and draw sprites, a bit like the blitter and Copper. However, you must realise that this is moving away from the Amiga to such an extent that you will have to program the new hardware directly, and MAST are providing a new version of Blitz Basic to help ease this process. How are 24-bit artists going to manage without the likes of DPaint, Photon Paint and Co.? Enter ASDG's "The Art Department", a fully-fledged image processing package designed for 24-bit graphics files. This software is very impressive, and does not actually require a 24-bit graphics board, but naturally supports several of the American products outlined, and the open-ended programming allows for future developments, hopefully including Colour Burst. ASDG also previewed a scanning module which drives the Epson ES-300C 24-bit colour 600 dpi scanner. The various output formats for the software and an ARexx interface for automated processing make this one of the most desirable packages around for generating high quality images for

And we owe the sound effects capabilities of the Amiga to its Digital to Analog converters



Ever smaller and more powerful boards.

ware used to coordinate the various sources, and my calculator disappears into scientific notation even thinking about the amount of graphics data involved in the show, to say nothing of the massive sound samples. How is it done? IVS were using awesome hard disk drives with their all-new, faster than a cheetah late for dinner, Grand Slam multi-function card. This includes a SCSI controller capable of dealing with 1.9 Mb per second, a convenient 8 Mb of RAM with an extra parallel port for a printer (freeing the usual one for samplers or digitizers), all on one nuclear-powered card (only joking, it fits into the A2000, but there is an external A500 version too). Upgrades will be available for existing customers of IVS in the US, but contact the UK distributors and hassle them for a decent deal. By the way, all these bits are available individually, if you don't want them

with a number of very powerful features. In the same way that the 24-bit graphics boards require new software to drive them, these sound devices also need custom programs to play and edit the incredible samples. The AD1016 is the top of the range, with four 8-times oversampling anti-aliasing filters, and a

**"IVS were using awesome hard disk drives with their all-new, faster than a cheetah late for dinner, Grand Slam multi-function card"**

DSP-56001, rated at 12.5 MIPS. In English, this means that the data is checked loads of times for accuracy and the DSP is a fast Digital Signal Processor (like in the NeXT thing which again, nobody





CSA working on 68040 boards for Motorola.

uses!). This can be programmed to perform special effects on the samples such as echoes, digital delays, or reverb in

**"All we need is for Jeff Minter to write a 24-bit version of Trip-A-Tron, connect up a 16-bit sound system and look out brain cells!"**

real time. Also on board is a digital I/O port so digital data can be read in from a suitable source (like a CD player), without actually having to sample it, thereby keeping everything as 1s and 0s. Naturally, both MIDI and SMPTE are fully supported. What about the software? The pre-release version of Studio 16 was on show, and is a bit like Perfect Sound or Audiomaster in function, but is obviously able to get far more out of the board. SunRize are working closely with Dr. T's and Blue Ribbon Sound so that their own sequencing software will be fully compatible with the upgrade, which does not come cheap, weighing in at a projected \$2000, but that is not much for professional use, so Pink Floyd may yet be controlling their show with a pile of Amigas. All we need is for Jeff Minter to write a 24-bit version of Trip-A-Tron, connect up a 16-bit sound system and look out brain cells! Going back down to 8-bits, and SunRize also announced a competitor for Audiomaster III called Audition 4! As this product does indeed look very impressive and fast. We shall take a look when it eventually materialises around the end of April. SoftwareThe incredible array of new hardware debuting at the show was not completely matched by new software, although there were some significant releases and an-

nouncements. Soft Logik are piling on the pressure for Gold Disk with a worthy adversary for Professional Draw, in the shape of Art Expression, their own structured graphics program. Designed to interface readily with PageStream, this is a fully featured package with all the usual drawing tools specifically tailored for DTP work. Also in the pipeline is "HotLinks", a fast word processor and bitmap editor (for normal graphics), which will be able to speak directly to PageStream, increasing the overall speed of the layout process. A networking version for multiple users is planned, and this is very interesting indeed. A newspaper, or magazine like **AUI** could be produced on several Amigas by a number of authors, and the copy downloaded into the Editor's machine for final layout before printing. That way only He is responsible for the mistakes! Gold Disk did not exhibit at the show, but their president, Kailish Ambwani dropped in to deliver a speech and demonstration about their latest project - a journey into the fascinating new world of multi-media, a market predicted by those who think they know to be worth around \$5 billion by 1995. This kind of money is not to be sniffed at, so Gold Disk have held their noses and came up with a budget package "Mediashow", and the all-singing and dancing "Showmaker". These are essentially programs used for coordinating events (via SMPTE) from different sources such as computer graphics, laser disks, video tape or whatever. The user can put together a presentation and the Amiga will do the work of the projectionist, sound guy and all the roadies! Somehow, lectures in Oxford University are never going to be the same again! Continuous development on Gold Disk's

DTP product, Professional Page, will proceed, with the emphasis on speed for future upgrades. Oxix products are also being released thick and fast. Already available is the upgrade to Photon Paint called SpectraColor, written by the same Israeli team, Bazbosoft and featuring brush animation (like DPaint), something new in HAM programs. The Amiga is seriously deficient in one particular area, and that is the processing of statistical data with subsequent drawing of high quality graphs. P-Stat is Oxix's answer to this, with the supplied functions being geared towards business research and market analysis, rather than for scientific use. Graphs can be generated in a number of formats such as PostScript, or AegisDraw for Professional Page importing and P-Stat should be released in the summer. Another low cost colour scanner with image processing software was announced by Oxix as nearly ready for release and costing under \$2000. ScanMaster works at 300 dpi and generates 24-bit colour images which can be saved in several formats. The ImageMaster software will allow you to zoom in on a specific area and convert the image into 256 gray scales for monochrome output. Another nice trick is the ability to remove a given colour from the image, so you can mark up copy in red, for instance, and then the computer will remove all the crop marks automatically. ConclusionThe show was both interesting, but yet slightly disappointing in that a number of important companies were not present, including Commodore themselves. A rival show which they will attend was being held also in New York

*If the advertising is to be believed, Amiga users into sound are in for a very healthy time*

**"For only \$495 (about £300), you can paint, animate and digitize in full 24-bit colour, and the results are absolutely stunning"**

within three weeks, so there was not a CDTV in sight. However, the current surge in Amiga interest generated by the Toaster means that any Amiga gathering in the States is bound to be dominated by NewTek, and their world-beater. We can only hope that it is not too long before the PAL version wings its way across the Atlantic, but in the meantime, I hope that this report has given you some idea of the ever-expanding Amiga dimension, although I have not mentioned all of the new products on the market. There is undoubtedly much more left to surprise us in Commodore's big baby, so the next few months should be very interesting indeed.



**"These settings are temporary and are lost if power is switched off unless saved using one of the three macros"**



## Panasonic KX-P1123

**Pat Kelly puts this 80 column version of Panasonic's successful wider carriage parent through its paces...**

**U**ntil recently you would probably only have considered Panasonic as a black goods manufacturer i.e. video, TV, and stereo etc.. However, like many other Japanese corporations, such as Sony, Fujitsu, and Oki to name but a few, Panasonic are steadily branching out into the area of world domination. This does not only consist of the home user market, but also the business and professional fields and also corporate computing. Lately, Panasonic have been making moves to capture a share in the market, they launched a PC and more recently the KX-P1124 136 column 24-pin printer which has received much acclaim. Now with the debut of this 80-column version and the ever-decreasing entry-price of 24-pin printers they have made a positive step into the mass-market.

After unpacking and connecting the KX-P1123 the first major set-up procedure normally involves setting DIP switches - the instructions for which are normally hidden inside the manual.

Panasonic, like many other manufacturers, have done away with the DIP switches and have instead used the front panel to allow the setting of controls and at the same time have also cleverly included a Quick Reference Guide in the form of an A4 card. The guide includes sections on Initial Set-up, Feeding The Paper, and Setting the Control Panel.

The control panel takes the form of a matrix, where the function to be changed is selected, and the required setting can be chosen. The current setting for each function is shown in the matrix by LEDs. These settings are temporary and are lost if power is switched off unless saved using one of the three macros, the first of which is the start-up default. During operation the other macro settings may be accessed, and thus it becomes viable to have the printer set-up for different requirements or even different machines. The default setting allows the printer-driver of the application software to control the output.

There are four letter quality fonts and one draft font supplied, and with the

omission of a font cartridge port there are no options for additional typefaces. Of the letter quality fonts there is Courier, Prestige, Bold PS, and Script. The latter is a joined-up font, which is usually not included a standard on many 24-pin printers.

Actual printing speed is relatively slow, but as the KX has a fair sized buffer it stores most of the output freeing the computer. The noise level emitted from the KX is much lower than many of its counterparts, especially while using the quiet mode. The printer is stable and the unit can sustain a few knocks without disturbing its print quality.

The paper can be fed from either below, or behind, in tractor feed, or from above in single-sheet friction mode. Unfortunately the tractor-feed unit is almost inaccessible, as it feeds paper from below and when, and if, a paper jam occurs it may be difficult to clear easily.

Most printers offer automatic load/park, many through the control panel, and the KX-P1123 does too, but this is controlled from the paper bail lever. The paper bail is the small bar with rollers which holds the paper onto the platen (large roller). If it is pulled back it will either load or park the paper depending on its current state. Again, as with some comparable printers, the Panasonic does not automatically switch itself online.

This printer is quite stylish in its design and gives the impression of being a sturdy and heavyweight performer. There are many lightweight printers on the market which do not offer the same robust performance. Certainly,

it looks a printer designed to last and give good service.

**"During operation the other macro settings may be accessed, and thus it becomes viable to have the printer set-up for different requirements or even different machines."**

**Price: RRP £295.00**  
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# HiSoft News

All the latest news  
and product  
information.

## ProFlight takes off!

ProFlight, the extremely accurate and flyable Tornado flight simulator from HiSoft, is now available for all the Amiga computers.



First released on the Atari ST where it has won a high degree of critical acclaim from reviewers and users alike, ProFlight is not only one of the most technically realistic simulators around but it is also tremendous fun to fly.

You can fly peaceful reconnaissance missions or roar into attack after carefully planning your combat mission. ProFlight is supplied with a comprehensive, ring-bound flight manual for an all-inclusive price of £39.95.



SAS Institute (the parent company of Lattice Inc.) has taken over the development and sales of the Lattice C 5 compiler for the Amiga and released a new version, 5.10a.

The improvements and enhancements in this version establish SAS C5 as the ultimate Amiga C compiler. Upgrades cost £34.95 (ver. 5.0x), £79 (ver. 4.xx) or £99 (ver. 3.xx).

## Pascal at last!



A brand-new version of the popular Pascal language will be available soon for the Amiga (A500 - A3000).

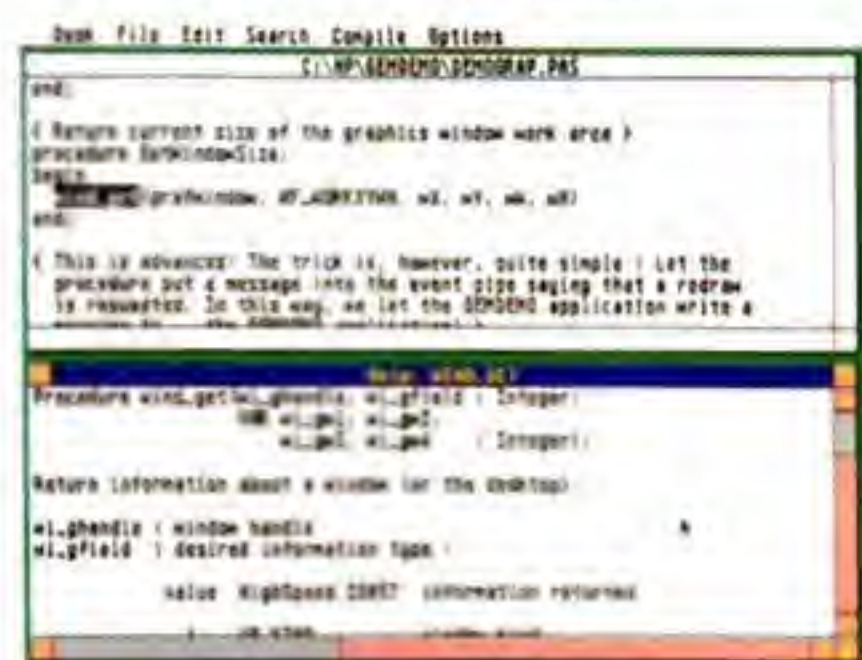
HighSpeed Pascal originally comes from Denmark, (the 'home' of Turbo Pascal), is extremely fast and friendly to use and is very closely compatible to the immensely popular Turbo Pascal on the PC.

Compilation speed is roughly 20,000 lines per minute on an A500 with excellent code generation for all the Amiga computers.

HiSoft is developing the package along with the original authors, D-House. Some of the features of this exciting new compiler are:

- Compile to memory or disk
- Unit concept as in TP5 allowing modular development and very fast compilation. Many standard Amiga-specific and Turbo Pascal compatible units are supplied

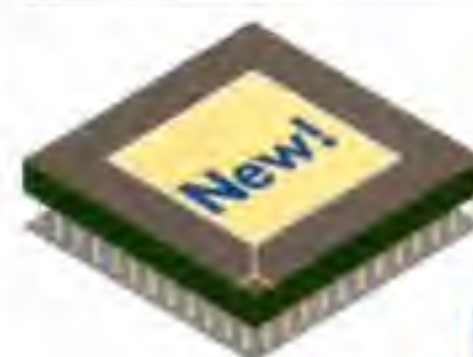
- Stand-alone compiler supplied. Multi-standard linker. Versatile Make facility
- Source include to a depth of 7
- Inline procedures. Source code control using conditional compilation



The HighSpeed Pascal ST Editor

- Integrated, multi-window editor with on-line help and interactive error detection and correction
- Numerous examples and helpful manual

HighSpeed Pascal should be available by the end of June 1991 at an inclusive cost of £99.95.



## More and more...

In addition to ProFlight and HighSpeed Pascal HiSoft is set to release a number of other new products for the Amiga in early 1991, showing our increasing commitment to the Amiga range of computers. To whet your appetite:

### HiSoft C Interpreter

The ideal way to learn the difficult C language, HiSoft C is an interpreter with a fully integrated editor and debugger. Release is due by the end of June 1991 at a price of £59.95.

### HiSoft Inspiration

This exciting new product makes it simple to design and use the Amiga's gadgets, requesters etc. in your favourite programming language. Release date is the end of May 1991.

### Devpac and BASIC

HiSoft Devpac version 3 and HiSoft BASIC version 2 are due out in the first half of 1991. Both feature a brand new, multi-window editor, much more speed and a great many new features. Tick the box(es) below for details.

Meanwhile, we have some very special offers on our existing products - use the order form below (you can photocopy it if you wish). Devpac 2 and BASIC 1.05 contain coupons offering you the chance to upgrade to Devpac 3 or BASIC 2 for £35 and £45 respectively.

Use this order form to obtain your HiSoft Software directly from HiSoft and we will send you a Starter Pack consisting of a quality mouse mat (printed with the Amiga ASCII set), an attractive disk wallet and 4 double-sided disks, totally free of charge!

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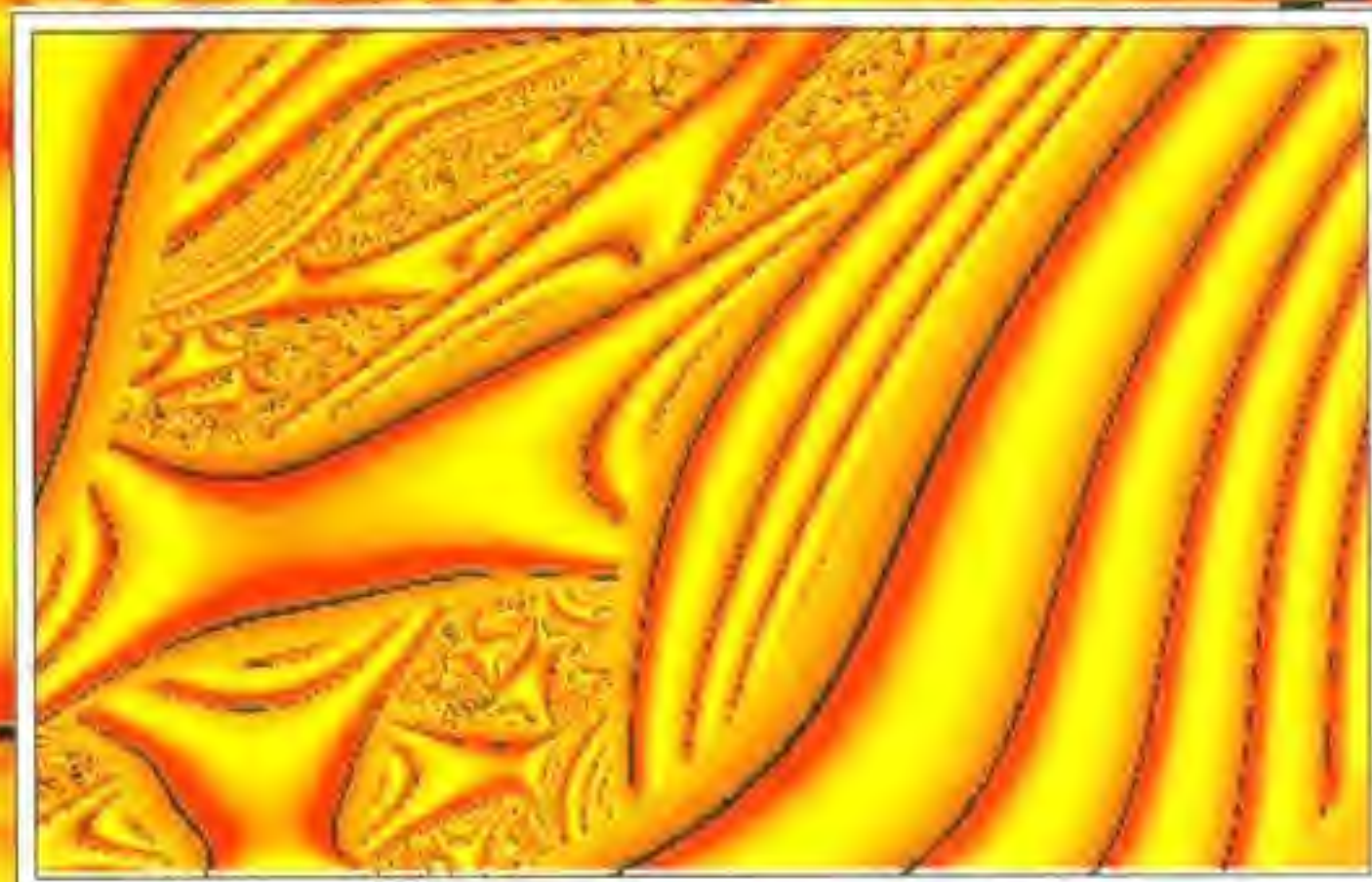


Figure 5

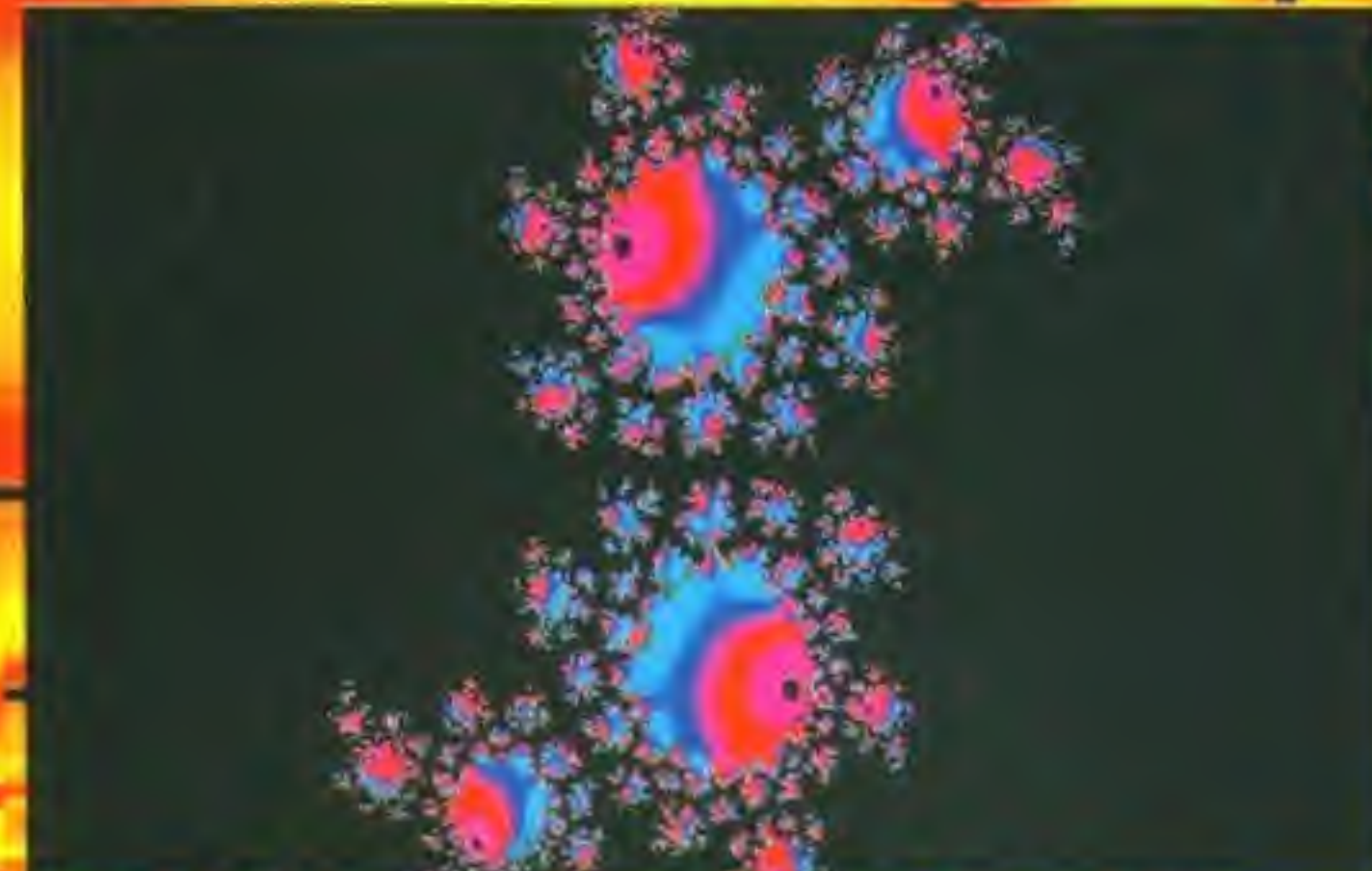


Figure 6

# Fractals and

Last month, in his introduction to this two part series John Kennedy explained the Mandelbrot Set and complex arithmetic. This month he ends the story on a high with other sets and many examples...



## The Julia Set

The Julia Set is another well-known 'recipe' and can be obtained from the same equation which is used to generate the Mandelbrot Set. Once you have found an interesting part of the Mandelbrot Set (again, use your own judgement here - it's the best tool you have) note down the value of  $C$  (both the real and imaginary parts).  $C$  can be thought of as a co-ordinate pointing to a part of the Mandelbrot set, for it turns out that the Mandelbrot Set is a map of all the possible Julia Sets.

To display the Julia Set for the co-ordinates you have selected, we use a similar approach to our Mandelbrot program, but instead of varying the real and imaginary parts of  $C$ , we vary the real and imaginary parts of  $Z$  to obtain our  $X, Y$  co-ordinates. We also vary the colouring procedure, and instead of giving colours to all the points that blow up to infinity, we give colours to the points depending on the magnitude of the equation after it has been repeated a certain number of times. Figures 6,7,8 and 9 are Julia Sets, plotted with a program similar to Listing two.

## Other Sets

If you want to obtain different looking graphs from those detailed above, all you have to do is change the drawing rules. Try experimenting with the number of iterations used to create the Julia Set. Try using less colours, or more. Try cycling the colours in a paint program such as Deluxe Paint if you want to see something really psychedelic!



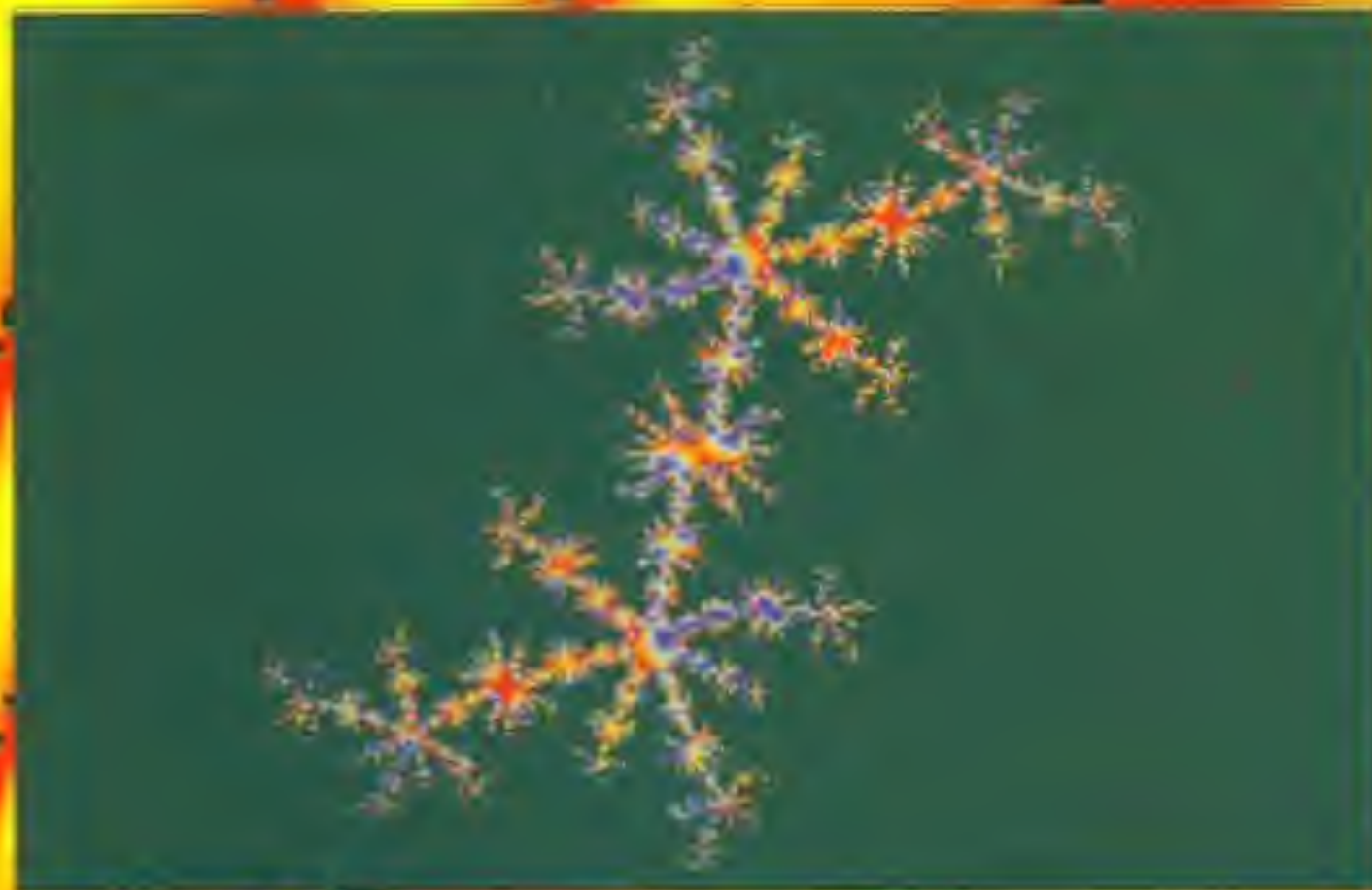


Figure 8

Figure 9

# Chaos Part 2

A different approach altogether is to use a different starting equation. For example, instead of squaring  $Z$  why not cube it? (as in figure 5) What would happen if you raised it to the fourth power? Or even higher? What would happen if you took the square root instead? Or the cube root? The possibilities are limitless.

One of the most interesting pictures I obtained was the result of a typing error: Instead of  $X*Y$  I put  $X+Y$  in the Julia Set program. The result is figure 4.

## Chaos

Chaos Theory has also recently made it into the public eye, most notably with the 'butterfly and hurricane story'. Its links with fractal geometry are through the fractal curves created by its mathematics.

The tell-tale signs of chaos were first noticed by Edward Lorenz who was working on a weather forecasting system at MIT. His model of the atmosphere used several equations, into which he would feed the various data describing the prevailing weather conditions. After the sums had been worked out, the result would be a forecast for the next day's weather conditions.

One day he was trying to repeat the previous days results by re-entering his input data. To his dismay, the program produced a completely different set of results. Was his program at fault? Surprising as it may seem, the differences in the

program's results were a consequence of the Chaos Theory, and not of a subtle coding bug.

The data input for the second run of the program differed from the input data for the first run, in that the first run data had been stored internally in the computer's memory from the very start. The second run data had been entered by hand, to a lesser number of decimal points. It was therefore different by a tiny, almost insignificant, amount.

However, even a tiny change in the data produced vast differences in the predictions. Or to put it another way, if a butterfly beat its wings in the Amazon jungle, the resulting change in conditions - no matter how small - could have ramifications so great that they could lead to something as extreme as a hurricane in America.

Obviously this was a great disappointment for weather forecasters, for it meant that not only would they have to collate data about pressure systems, wind speeds, rainfall etc. etc, but they would also need to keep track of all the butterflies in the amazon. To be blunt, they could never, ever know enough information to make an totally accurate prediction. Even an extraneous electron passing close to a molecule of ice in the South Pole could change everything. A heavy depression settled over the Met Office (computer division).

Eventually the sun did break through the clouds, as more was understood about how Chaos seemed to work. Although any given system was unpredictable, it was found that certain families of systems gave more or less similar results. For example, weather system A might result in a certain predicted forecast. Weather system B might result in another forecast. ►

**"To his dismay, the program produced a completely different set of results."**



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Now, making a tiny change to A's initial state resulted in a forecast that was vastly different from its original. But a tiny change in B didn't make that much difference to its forecast.

It could therefore be said that system A was unstable - the slightest change (that darn butterfly popping down to the shops again) could result in an inaccurate forecast. System B however, was slightly more stable - and its forecast could be treated with a little less scepticism.

The idea of Chaos has been applied to almost every dynamic system around, for some things are proving rather more tricky to predict than might be expected. The flow of air around a wing, the movement of gas clouds on Jupiter, and that thorny old problem - why is the Universe the shape it is?

Of course, Chaos won't tell us the answers. But it will tell us how far they might be from the truth.

If you want to try some chaotic programming, your best bet is to fiddle around with population curves and bifurcation diagrams. The big equation in Chaos is

$$X = rX(1-X)$$

Playing around with that will keep you busy for weeks!

## Appendices

### A. Reading List

**Title: Fractal Programming in C**

**Author:** Roger T Stevens

A fabulous book, and a good introduction to all sorts of Fractals and Chaos equations. It's absolutely crammed with well explained example programs (which could easily be adapted to other languages, so don't let the 'C' bit in the title put you off) and colour pictures. The later chapters discuss (with listings) methods of generating fractal landscapes. Very highly recommended to anyone with an interest in graphics programming.

**Title: Computers, Patterns, Chaos and Beauty**

**Author:** Clifford A Pickover

This book gets much more technical in places and covers many topics other than Fractal geometry. If you are interested in computer graphics and how they are used in other branches of science, this is a book that will keep you enthralled for months.

Example programs are provided which can easily be implemented in any language. If you want a peek of the current direction of state-of-the-art computer science, ask your library to get it immediately.

**Title: Chaos: Making a New Science**

**Author:** James Gleick

The 'popular' book on Chaos. If your appetite has been whet, search this paperback out, but don't expect a bedtime read.

**Title: The Fractal Geometry of Nature**

**Author:** B. Mandelbrot

Where it all started...a collection of beautiful images produced from fractal experiments. Look out for it.

### B. Suggested programs

There are many programs which will quickly and easily produce Mandelbrot and Julia sets for you. Among the best is the PD program 'Mandelvroom v2.0' by Kevin Clague. 'MandelMountains v2.01' by Matthias Ortmann is also worth looking at. If you're more of a demo-type person, get the PMC Fractal Demo.

If you want to see how fractals can be used beyond Mandelbrots, a commercial program called 'Scenery Generator' from Natural Graphics is your best bet. It uses fractal geometry to produce wonderfully realistic views of mountains, valleys and lakes. The views are rendered in high resolution with plenty of details such as clouds and water ripples (figure 10). There is a cut-down PD version of the program around too, if you don't want to splash the cash. Highly recommended.

### C. Example DIY programs

Writing your own programs to create fractal curves is a relatively easy task. However, because of the large number of calculations needed, you are strongly advised to use a programming language such as C. Using AmigaBASIC to draw an M-set is entirely possible, but would take a very long time indeed. If you really want to use BASIC, use a compiled version such as HiSoft or GFA.

If you are rich, you should also obtain some sort of accelerator card: Preferably one sporting a maths co-processor. Alternatively, buy an Amiga 3000.

**Listing one - Mandelbrot Set Pseudo-code**

**Formula:**

$$Z = Z^2 + C$$

where the real and imaginary parts of C vary from minus to plus 2, and Z always starts at 0.

**Colour:**

How a pixel is coloured depends on the rate at which the repeated formula tends to infinity. If at any time the magnitude of Z exceeds 2, it will tend to infinity.

Testing for  $(Z.\text{real}^2 + Z.\text{imag}^2 > 4)$  achieves the same effect.

**Variables:**

x,y: the co-ordinates of points on the screen.

C: a complex variable, with real and imaginary parts.

Z: the main complex variable.

iterations: the number of times the formula repeats

colour: the colour of the pixel to be plotted max.iterations:

maximum number of iterations max.colours: maximum number of colours

**Program:**

```
y=0;for (C.real=-2 -> 2 step 0.02)
```

```
{
```

```
  x=0;
```

```
  for (C.imag=-2 -> 2 step 0.02)
```

```
  { Z=0; blowup = FALSE;
```

```
    for (iterations=0 -> max.iterations)
```

```
    {
```

```
      Z.real = 2 * Z.real * Z.imag + C.real;
```

```
      Z.imag = Z.imag^2 - Z.imag^2 + C.imag;
```

```
      if (Z.real^2 + Z.imag^2 > 4 {blowup=TRUE;break;})
```

```
      x=x+1;
```

```
      if (blowup!=TRUE) colour=0;
```

```
      else colour = (iterations MOD max.colours);
```

```
      Plot (colour,x,y);
```

```
    }
```

```
  y=y+1;
```

```
Listing two - Julia Set Pseudo-code
```

**Formula:**

The same as for Mandelbrot Set, except Z's real and imaginary components are varied for each pixel on the screen, and C is fixed.

**Colour:**

If the expression 'blows up' to infinity, the colour is black, else the magnitude of the equation after the set number of iterations is converted to a colour.

**Program:**

```
C.real=?;
```

```
C.imag=?;
```

```
y=0;
```

```
for (real=-2 -> 2 step 0.02)
```

```
{
```

```
  x=0; for (imag=-2 -> 2 step 0.02)
```

```
  { blowup = FALSE;
```

```
    count=0; Z.real=real;
```

```
    Z.imag=imag;
```

```
    for (iterations=0 -> max.iterations)
```

```
    {
```

```
      Z.real = 2 * Z.real * Z.imag + C.real;
```

```
      Z.imag = Z.imag^2 - Z.imag^2 + C.imag;
```

```
      if (Z.real^2 + Z.imag^2 > 4 {blowup=TRUE;break;}) count=count+1;
```

```
    }
```

```
  x=x+1;
```

```
  if (blowup==TRUE) colour=0;
```

```
  else colour = count MOD max.colours;
```

```
  Plot (colour,x,y);
```

```
}
```

```
y=y+1;
```

```
}
```



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D086 Hardcrack Graphics - Impressive Demo  
D088 Silents Megademo - Very Good  
D134 Garfield Slideshow - Cool Piccy's  
D147 Neighbours Slideshow - Hilarious  
D148 Viz Calendar - Good  
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D151 Robocop 2 Slideshow - Nick Disk Full  
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# Supercalc 5

If you have a MSDOS bridgeboard then you may want what Mark Rose believes is the finest spreadsheet package around

**U**n the annals of P.C. software, SuperCalc5 from Computer Associates (CA) can be considered as one of the founding fathers. Since its launch in 1981, Computer Associates claim to have sold over 3 million copies. They also claim to be one of the world's leading software companies with a 1990 turnover of \$1.3 billion, employing some 7000 people worldwide. Not what one might call an insignificant organisation! So it surprised many last November when CA announced that they were reducing the recommended retail price of SuperCalc5 from £396 to £79.. no its not a typing error £79 was to be the new price. CA gave the reason for the 80% price drop as being in their opinion that was the right price for a spreadsheet product and at £79 it would encourage potential purchasers to buy legitimate product rather than use pirated copies.

So what do you get for your cutprice £79? The product box contains an impressive assortment of goodies. The software is in the customary licencing agreement envelope, opening it indicates your acceptance of the terms, for the 5 1/4 inch disk user there are 10 disks with 5 for the 3 1/2 inch user. Documentation is generous with a loose leaf 700 page Reference Manual complete with hard backed 3 hole binder; a 200 page User Guide; two smaller booklets titled "Up and Running" and "Quick Reference", Registration Card, Invitation to receive details of CA's education and training program, addenda/updates and function key cut outs.

The minimum hardware configuration is an IBM XT, AT, PS/2 and compatibles with 512k of RAM running DOS 3.0 or higher, a hard disk especially as SuperCalc5 occupies some 3.1 meg of

disk and a bulk basic mono monitor. Our more prosperous readers will be pleased to know that SuperCalc5 also supports most printers and plotters including colour, colour monitors, expanded memory and networking.

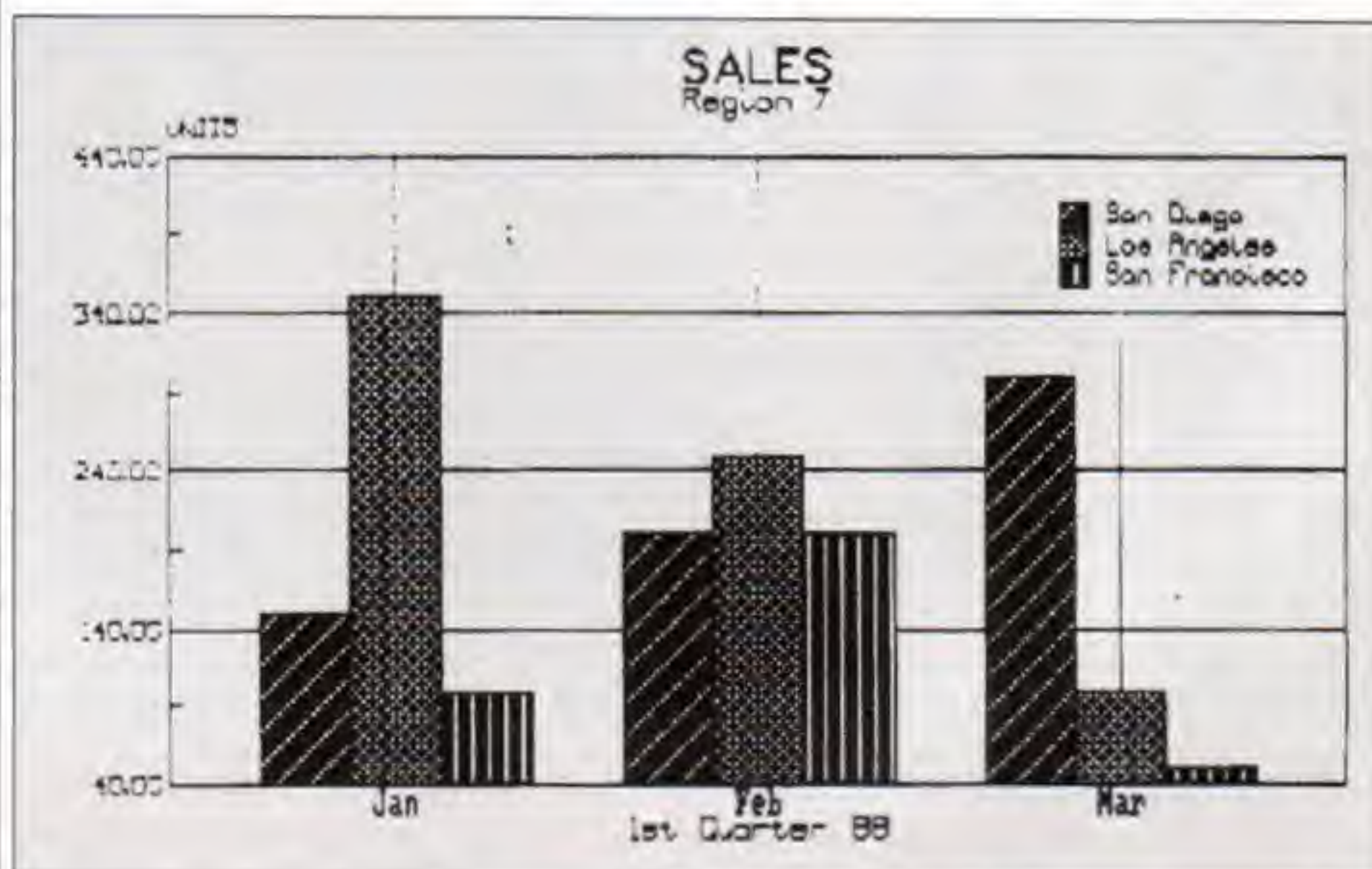
Getting started is no problem. Set up a directory say \CALC and transfer the files from Drive A:. Once loaded it is useful to run the TUTORIAL program which comprises 9 lessons providing a basic introduction to :- finding your way round the spreadsheet, formatting, output, macros etc. Then move to SuperCalc5 proper by entering SC5.

Essentially SuperCalc5 is a character-based product with the familiar display of columns notated by letters across the top of the screen and rows vertically in numbers. The central spreadsheet displays 20 rows with the bottom 4 rows reserved for the Dialog Panel. Command

options are available by entering /, the prompt line of the panel offering a 21 item menu presented in alphabetical order. There are another 11 commands which are not so widely used accessed by entering //.

As SuperCalc5 does not support Microsoft Windows or a mouse, a command is chosen either by using the left and right direction keys to place the cursor over the command or by entering its first letter e.g. O for Output. Once the command is chosen you are then presented with sub menus which in turn may require further choices until the requirement is satisfied. As an example it is possible to go down through 6 menus when defining how the spreadsheet should be printed. It may sound complicated but the commands are easy to follow and very quickly become intuitive. Many of the commands will be familiar to

*"Once loaded it is useful to run the TUTORIAL program which comprises 9 lessons providing a basic introduction"*





# TEST DRIVE

those of you who have used LOTUS before. In fact, SuperCalc5 is fully compatible (there are a few minor differences highlighted in the documentation) with LOTUS with an option to use the LOTUS menu structure as the default. When used in LOTUS mode you can be forgiven for thinking that you are in LOTUS. I happily experimented swapping between the two modes, using the LOTUS commands for building my spreadsheet and SuperCalc commands to produce the output. This was very useful as my Release 2 of LOTUS had minimal Laser support, whereas SuperCalc5 has an impressive library of supported facilities which I particularly enjoyed experimenting with; drawing horizontal and vertical lines in either single or double spacing with a choice of 5 thicknesses, defining grids and borders. SuperCalc5 also supports fonts choice and shading at the cell level. Using these facilities it is possible to design very impressive reports.

You are not forgotten if you are not using a Laser, the features will, of course, be dependent upon your printer. If you are using a dot matrix then the built-in SIDEWAYS program will be useful. This enables output to be printed in landscape instead of the traditional portrait manner.

At this juncture I must mention the free telephone Hotline service provided

*"I happily experimented swapping between the two modes, using the LOTUS commands for building my spreadsheet and SuperCalc commands to produce the output."*

software, I half expected to be politely told to take the problem up with my dealer but that was not so. But, I was talked through a number of possible fixes and after some experimentation and two subsequent phone calls, my laser was up and running. Later, during the course of this review, I had

occasionally twice more phoned the Hotline with queries; both times my problems were sympathetically heard and politely and professionally solved. I was impressed at this level of support for a £79 package. SuperCalc has extensive graphics features; their use being determined by the hardware being used. There are eight basic chart types Bar, Line, Pie, Dual, Area, Hi-Lo, X-Y, Radar and Word. Further choices are available within the basic design i.e. there are 5 types of bar chart. There is enough variety to satisfy the most discerning user. Charts can be further customized, for colour, fonts, lines and grids, and legends; they can also be presented in 3D.

As you would expect of a serious spreadsheet, a data management facility is provided. Each row representing a record and each cell within the row representing a field. Data can be found, sorted, selected, extracted, and outputted de-

pendant upon the selection criteria. It can then be analysed to provide frequency or regression information.

For the really serious business models, SuperCalc5 offers features whereby data can be "linked" between

spreadsheets so providing a consolidation facility, particularly useful in say departmental analysis. To keep track of these links, SuperCalc records the link in a Referenced Spreadsheet Library. The linking concept is also to be found in the



Multipage spreadsheet feature. Basically this represents a pile of pages filed as one spreadsheet that can either be consolidated on one of the pages and/or linked with other spreadsheets.

There may be some of you out there saying to yourself "Aha! having all these features is all very nice but what commitment have Computer Associates to the product? How are they going to safeguard my investment. No, so much in money as in time, if I buy SuperCalc" Well, the answer from Computer Associates is that they are fully committed to the product. Version 5.1 is due for release mid-1991 at a cost of £25 to existing users; a Windows version later is planned for later in the year. All future upgrades will be at a nominal price. Computer Associates have made these statements in public as a mark of their commitment to the product and its users.

*"I was impressed at this level of support for a £79 package."*

Earlier in this review I asked "So what do you get for your £79?" The answer is quite simply the finest value spreadsheet currently available in today's P.C. software marketplace.

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+ INU21G18 Form=IF(AND(ISDATE(E10),OR(F10=15,F10=18)),HHH,H)  
Width: 12 Memory: 44 Last Col/Row: R21  
READY F1:Help F3:Names Ctrl-Backspace Undo Ctrl-Break Cancel

by Computer Associates which I used when trying to get SuperCalc5 to "talk" to my Laser. I did not encounter any difficulty getting through. Having explained my difficulty (with the Laser) - no, I didn't say I was reviewing the

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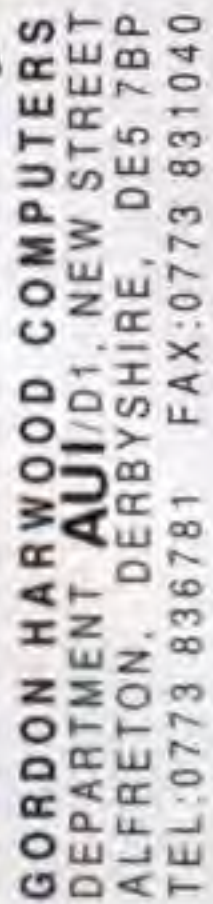
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PAGE 4







A mis-hit drive has sent the ball into a bunker just off the green. It's a tricky shot, but...

feature is the switch in camera angles half way through a long shot. As you drive the ball up the fairway, it shoots off into the distance. The view then switches to one from a camera positioned approximately where the ball will land. Facing in the opposite direction now, the ball speeds into shot, giving you a very clear view of where it ends up.

When it comes to putting, you'll need to consult the contoured diagram of the green. Separate from the main 'window on the world', this view of the green is overlaid with a grid, showing up all of its little hills and undulations. Although it's a bit awkward, you can rotate the view to get a good idea of where to aim your shot. Back on the real green, you get an

# PGA Golf

Yes, PGA Tour Golf is better than Leaderboard. Find that hard to believe? Let me convince you.

I'll get the worse point out of the way first. Rob Hubbard, once considered the Jan Hammer of computer game music, has supplied the soundtrack for the game. It consists of a grating series of fanfares, which squeal from the speakers as you enter the copy protection code. This from the man who composed some of the best ever computer music. Fortunately you can turn it off, leaving just the tranquil sound effects.

With that merely a distant ringing in your ears, you can get down to business. Up to four people can take part. Any of these four can be computer controlled, so even if you're on your own, you still get an opponent to play against. Although you won't see them, you're actually competing with 58 professional players, with your position on the leaderboard adjusted accordingly after each hole.

As you approach the first hole, and every subsequent hole, you're given a fly-by view of the green, before the camera moves back along the fairway to the tee. A selection of pros give brief

bits of advice on each hole, suggesting the best route to the cup. As with most features not essential to playing a shot, this can be cut out altogether to save time.

A few different control methods have been tried in the past, but when it comes to actually hitting the ball, Leaderboard's two-part power and accuracy bar is a firm favourite. It works well, and PGA Tour uses an almost identical system. One click sends the power bar rising, a second sets the power of the shot, and a third click decides whether you hook or slice the shot, or play it dead straight. If you need an extra long shot, you can let the bar move into the overloading sector. This gives you extra power in the shot, but magnifies any slight imperfections. A shot that might have veered slightly to one side with normal power, may now end up way off course, embedded in the rough.

One of the best new







Nothing's too much for this golfing ace: It's in the hole for a great birdie! Let's see that again in slow motion!

aerial close-up view of the hole in the corner of the screen, as you make your putt and hold your breath. Your own "Oooh!"s are echoed by the computer as your ball circumnavigates the hole and pops out. Even so, you'll be congratulated with a healthy round of applause

backup to be on the safe side.

PGA Tour Golf has just about everything Leaderboard has, and more. It's not a game that's going to knock you out with stunning graphic tricks, and because of its easy-going nature, you probably won't realize it's won you over until you look at your watch and see you've been playing it all afternoon. The multi-player option and the computer controlled players make it suitable for both social and solo occasions. With its four 18 hole courses, it's got a long life ahead of it. Even if you wouldn't know a sand wedge from a cricket bat, it makes no difference in PGA Golf Tour. If you're still unconvinced, track down an independent dealer and get yourself a play test. You'll be hooked in no time. T.H.

# Tour

## Electronic Arts

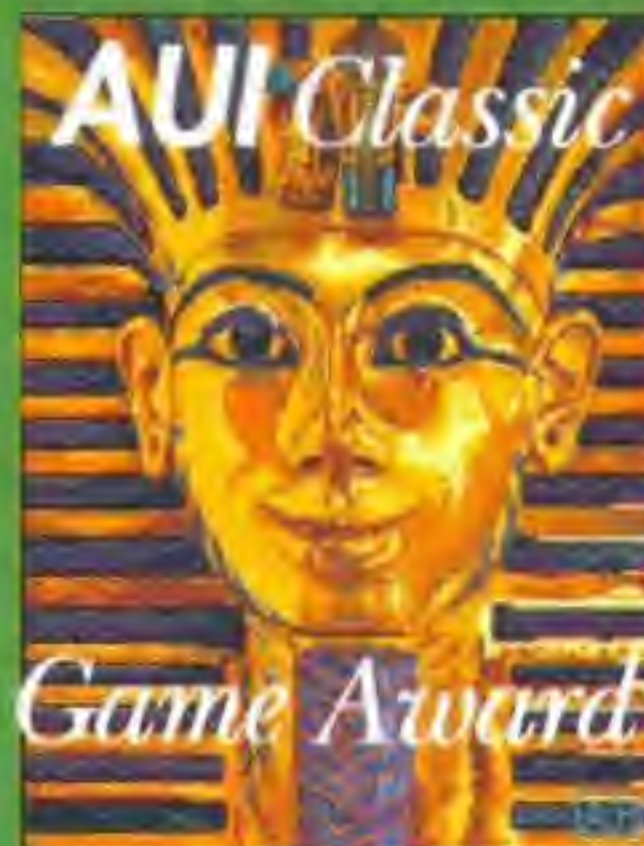
when you do get it down, no matter how many shots it takes you. Birdies and eagles are met with a suitably ecstatic reaction from the invisible crowds.

Some of PGA's new features may not sound revolutionary, but they each make the game that bit more compulsive. Especially good shots are replayed automatically, with the ball's flight-path plotted as it goes. Any shots not deemed impressive by the computer can still be replayed at the player's request. Unlike most other golf games, the wind in PGA is constantly changing direction and speed, even as you line up your shot, which adds a touch more realism.

Player names and records are automatically saved to disk. Thanks to this, you can load up your player from disk before each game, attempt to better your driving accuracy, or try to knock a couple of shots off your best 18 holes. This means you need to leave the program disk write-enabled, so watch out for viruses. Both of the disks are AmigaDos compatible, so do make a



**"Especially good shots are replayed automatically, with the ball's flight-path plotted as it goes"**



## DECISION

Difficulty: 5/10

Graphics: 92%

Clear and attractive 3D backgrounds with fast, smooth and realistic ball movement.

Sound: 50%

The painful music is offset by the quality sampled sound effects.

Gameplay: 94%

Relaxed but very competitive, with bags of long-term attraction.

Decision: 94%

A great game worthy of any sportsfan's folding stuff.



Going into the 18th hole with a slim lead, Gunther, the computer player, throws it all away at first. Here we see his sixth attempt to get across the water. A few shots later, the disheartened golfer picks up his ball and makes a 12!



Leave it on the green and you can pull off some splendid puns.

	1	2	3	4	5	6	7	8	9	OUT
WIND	272	202	284	287	146	245	302	281	243	5274
FM	4	5	4	3	3	3	3	4	5	38
DAN	4	5	5	5	3	4	3	4	5	38
GUNTHER	6	4	4	3	3	3	3	4	5	35
TONY	5	6	2	3	3	4	2	5	3	35

	10	11	12	13	14	15	16	17	18	TOTAL
WIND	435	274	202	284	287	146	245	302	281	5274
FM	5	4	5	4	3	3	4	3	4	38
DAN	4	4	4	3	3	3	4	3	4	36
GUNTHER	5	5	4	4	3	3	3	3	4	35
TONY	4	3	4	5	5	4	6	2	4	37

The final scores. Note Gunther's tragic score of 12 on that last hole, as the resolve and consistency of the AUI staffer who has earned in a neat 72 shots to win the match.



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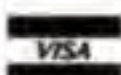
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Some of the bigger tracks seem to have been designed around the streets of Paris city centre.

# Supercars II

Gremlin £24.95

I'll always welcome a bird's eye viewed racing game, as I've been a big fan ever since Atari's monochrome Sprint coin-op was released all those years ago. Supercars was the first to have any success in recreating the style on the Amiga, and the sequel, of course, promises even more.

Like the first game, Supercars II doesn't attempt to simulate a particular form of motor racing. The cars are imaginary Lotus and Ferrari deviants, and the tracks look like something you would make up with a Scalextric kit. There are three divisions from which to choose. They range in difficulty with the complexity of the tracks and the skill of the opposing drivers increasing as you move up. You're advised by the instructions to start in the easy division, but, unless you want to simulate a cruise around a disused airfield in a Reliant Robin, go straight to the second division.

Control of the car is simple, but that's not to say it's easy. In fact, the controls can be the cause of a lot of initial frustration. The program runs at a fairly low frame rate, and as you might expect, it's rather late in reacting to the joystick. More often than not, the car oversteers a little after you release the stick. This problem should have been rectified, as it gives you a lot less control than you really need. Similarly, if you tap the joystick to turn just a little, it often ignores you completely.

What it lacks in speed and control response, it makes up for in the track designs. The first few are nothing to shout about, but once you get onto the banks and

jumps of the trickier circuits, things take a turn for the better. The car reacts realistically to the dips and banks, giving the tracks a good solid, semi-3D feel.

Another new feature is the two-player mode. This is let down a little by the scrolling, which has trouble keeping up with the cars. A lot of the time, partly because of the reduced window, you only get to see an inch or so in front of the car, so there's not much warning of what's coming up.

In between races, you get occasional conversation interludes. Selecting the "correct" answers from a shortlist will either earn you money, or reduce a fine. This is just a matter of learning the right answers through trial and error. The money you earn from the

**"The car reacts realistically to the dips and banks, giving the tracks a good solid, semi-3D feel."**

races can be spent beefing up your car. Missiles can also be bought and used to sabotage opposing cars.

On the sound front, it's lawnmower time again, and as for that music... Why nobody can manage to sample a car engine is beyond me. Still, played on the higher levels, Supercars II is good fun. It could do with a bit more speed, but just about gets along OK as it is. Fans of the original expecting a souped-up version probably will be satisfied.

Tony Horgan



## DECISION

Verdict: 77%

A little disappointing, but still the best race game of its type on the Amiga.

Graphics: 81%

Detailed sprites and backgrounds, but rather shaky scrolling at times.

Sound: 43%

A standard whining "boom-chakka" soundtrack irritates between races, while sampled washing machines are used to simulate the roars of the hot rods.

Gameplay: 79%

Veers on the over-fiddly side, but manages to get the pulse racing on the meaner tracks.

Difficulty: 6/10



"You'll never take me alive, Suffer!" seems to be lacking from your choice of comments in the police station.



Soaking drench, hills and banks are all thrown at you in the first few tracks of the second level.



It's a jungle out there! If you're going to survive, you'll need to be loaded up with some heavy duty ammo.

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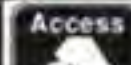
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# Super Monaco GP

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If you can stand the spine-twisting seat of the coin-op, Sega's Super Monaco GP is a brilliant race game. Massive sprites are used to recreate the Monaco circuit, with the finishing touch given by the sporty new Formula One "butterfly" gearshift behind the steering wheel. Both of those were obviously going to be compromised for the conversion, but there was hope for a decent replica, as the anonymous programmer of Super Hang On and Power Drift was drafted for the 16-bit conversion.

Instead of a straight conversion of the coin-op, we're given a kind of 1/2 remix. The original featured the Monaco circuit and nothing else. A race game with one circuit isn't going to win many fans, so another three have been added to the Amiga version. This means that before you get to race around the Monaco circuit, you have to get through three very difficult qualifying rounds.

Your four-race season begins in France. Qualification takes place on an empty track, but it's not without its

hazards. Setting the mood for the rest of the game, the qualification is an all or nothing affair. Getting pole position is easy enough, as long as you don't crash. One little knock, and you could find yourself out of the race.

Back on the grid once more, the race gets underway. If you're on lucky, you'll have to race in the wet. Your car doesn't have great traction at the best of times, in the wet it slides around all over the place, demanding you keep your speed right down. Either way, almost all the bends need to be rounded with extreme caution. As in the qualifying lap, just one little scrape can send a front wheel spinning into the air, bringing the game to an abrupt end. The

further you get into the game, the more infuriating this becomes. As far as arcade race games go, it's a rule of thumb that the player is never instantly put out of the race because of a single error. There are good reasons for this, and Super Monaco GP would have done well to conform to the rule. Why it punishes mistakes so severely is strange, as I've never encountered the problem with the coin-op.

Technically, Monaco GP is impressive. The update is fast, and the graphics are neat. It's not exactly a rip-roarer when it comes to sound, but it does the job.

Rather than putting the extra tracks before the Monaco race, it would seem a better idea to have done it the other way around. Some lesser skilled fans of the coin-op may never even get to race the Monaco GP! It could have been a great game. Instead, it's a missed opportunity that's going to disappoint fans hoping for a conversion that's just like the original.

Tony Horgan

## DECISION

Decision: 67%

There's fun to be had, so long as you can handle the frustration.

Graphics: 78%

The roadside scenery is speedily animated, but looks as if it's moving backwards at times.

Sound: 60%

The absence of the bleepy music would be no loss, but the in-game effects are adequate.

Gameplay: 66%

If you get off on pulling your hair out and beating your head against the wall, you'll have the time of your life.

Difficulty: 9/10



"As far as arcade race games go, it's a rule of thumb that the player is never instantly put out of the race because of a single error."







Player two seems to have had enough, and this is only the beginning! The alarm clock on the left of the screen can be used to freeze balloons, while the dynamite blows them into tiny bubbles.

# Pang

Ocean £24.95

What a stupid idea! Who on earth would think up a game that involves travelling round the world, shooting balloons with harpoon guns? Who else but the Japanese...

Simple, satisfying gameplay is where Pang scores. It's like a cross between Space Invaders and Asteroids, and occasionally it turns into a platform game. Instead of a spaceship, you control a safari-suited cartoon kid. The asteroids are changed to balloons, but like asteroids, they divide into two smaller balloons when they're shot.

The game takes place in a series of enclosed screens. Starting in Japan, you tackle your first balloon before a backdrop of lush green mountains. Pressing the fire button sends a harpoon spiralling up the screen. If the balloon hits either the point or the dangling rope, it splits in two. Each balloon splits into another smaller pair, until they get so small, that they disappear altogether. Clear them all and you've cleared the screen.

As you work your way across the globe, the screens get more crowded, with more balloons, platforms, ladders and various wildlife complicating matters. Some balloons hold bonus items, including pistols, shields and harpoons tipped with grappling irons.

If you feel things are getting a bit predict-

able, have a go at the simultaneous two-player mode. With both players dashing around the screen, frantically trying to burst more balloons than the other, you can get through your stock of lives in no time! The screen has to be restarted when one player is hit by a balloon, so it can be a right uphill struggle if your partner's no good.

This is one of the closest arcade conversions I've ever played. It's barely distinguishable from the coin-op; put it in a coin-op cabinet and no-one would notice the difference. The sprites are superb. Both the players have a cute monkey-like appearance, blinking their big eyes as they totter across the screen. With clever use of different colour schemes, the equally impressive backgrounds are recycled without looking cheap. A typically jingly tune plays in the background, along with some good balloon-bursting sound effects.

Pang is the sort of game that's simple enough for the youngest gamers to get into, but still has a lot to offer the rest of us. The difficulty level can be set to one of four levels, so there's no problem there. Ocean France have done the business again, with a carbon copy of a very playable coin-op. Give it a shot if you fancy something a bit different.

Tony Horgan

## DECISION

Verdict: 82%  
Just like the coin-op!

Graphics: 94%  
Excellently animated cuddly sprites and colourful backgrounds.

Sound: 70%  
Twinkly jingles and decent sound effects.

Gameplay: 84%  
Instantly addictive.

Difficulty: User-definable  
(2-8/10)



The familiar backdrop to Japan's Mount Fuji is an appropriate choice for the tranquil first level.



The world is your oyster... pick your destination from the stylised map.



Oops! Player one got a sloppy bubble in his eye, and loses his last life.







Norbert the Narc tests out his new rocket launcher.

# ▶▶ Marc ◀◀

Ocean £24.95

Marc's a funny old coin-op. It houses some extremely high resolution graphics hardware, but uses it to display some very unspectacular sprites and backgrounds. Still, helped along by the Williams' brand name that's etched onto the minds of millions of Defender addicts, it made its mark. Unfortunately, it looks less certain to make an impact in its Amiga incarnation.

Had the central character been a crazed gunman, and the "enemy" cast as innocent civilians, Marc would no doubt have caused an outcry for its extreme bad taste. Blowing away crowds of people (or with bazookas and shotguns is, however, okay if the bloke with the gun is a cop, and the crowds are dope dealers. That's one way of silencing the shoot 'em up critics I suppose.

Twelve modestly dimensioned levels make up the game. The idea's pretty simple: blow away as many enemies as possible on your way to the level's exit. You're armed with two guns. One has an unlimited supply of normal bullets. The other is just for special occasions, like when a whole bunch of men come at you in a line. Let rip with a rocket, and the felons are reduced to a pile of gory lumps.

Most levels have their own particular enemies, but the bulk of your lead finds its way into the swarms of dirty old men in brown raincoats. These are backed up by packs of dogs, constantly yapping at your heels. To get rid of these you have to crouch down and fire your gun, but the controls are so unresponsive at times, you hardly ever get the chance. This is made even worse by the habit the dogs have of sticking to you like superglue. Trying to shake them off doesn't get you far. As soon as you've got rid of one, another three or four turn up its place.

The graphics are fairly close to the originals, with the reduction in resolution of course, but look very dated. The backgrounds seem to have been knocked together from a collection of hastily-drawn brickwork patterns, shop fronts and doorways. The juddery scrolling does nothing to help its looks (another victim of the old ST-port syndrome?).

Although there are twelve levels, there's very little variety. No level guardians, no extra weapon pick-ups, and a distinct lack of imagination in the level designs. Hardcore fans of the coin-op will get something out of it.

*Tony Horgan.*



## DECISION

**Decision: 56%**  
Have a look if you're mad about the original, but don't expect too much.

**Graphics: 53%**  
Dodgy scrolling, plain backdrops and wooden sprites.

**Sound: 70%**  
Sampled blasts, bangs and barks do the job.

**Gameplay: 57%**  
Monotonous after the first few minutes, with nothing much to keep you going for long.

**Difficulty: 5/10**



Put the card in the bank machine to open the exit.



Norbert demonstrates two methods of arrest, one rather more violent than the other.







# CHIP'S CHALLENGE

EPYX £24.95

It doesn't look like an Epyx game, does it? We've come to expect ground-breaking graphics and gameplay from the former king of computer games. So why then, does Chip's Challenge look like something from the days of the Vic 20? Well, as they say, the old ones are the best, aren't they?

It kicks off with a long-winded copy protection check. It uses the old code-wheel technique, and demands you input

**"The first few levels gently break you into the flow of the game, introducing the various features and traps without overwhelming those of us too lazy to read the instructions."**

three correct codes before you get into the game. Those with less than perfect eyesight should beware, because in order to make photocopying impossible, the code wheel is printed with a glossy black ink, on a black card. An interesting contribution to the current anti-piracy furor.

The game itself is a variation on the Gauntlet theme, with the emphasis switched from monster bashing to puzzle

solving. Each of the 144 scrolling screens has an exit leading to the next. Before you can leave through the glowing portal, you have to round up a certain amount of silicon chips, which varies from level to level. The first few levels gently break you into the flow of the game, introducing the various features and traps without overwhelming those of us too lazy to read the instructions.

Picking up chips isn't just a matter of munching dots Pacman-style. Most are blocked off in one way or another. Locked doors are a common problem, which can only be opened with their corresponding colour-coded keys. Water and fire are no-go areas unless you've found the appropriate shields. Conveyor belts act as one-way systems, ice can be countered with spiked boots, and a selection of switches toggle various other obstacles. You're given a password after each completed level, but if you continually fail to solve a screen, you get the option to jump to the next. Together, these features manage to rule out boredom from playing the same levels over and over again.

If you're after meaty sound effects and funky music, you'll be disappointed.

Chip's Challenge does the best impression of an Atan ST you'll ever hear. The block-based graphics aren't going to have you foaming at the mouth either. Nice sounds and graphics aren't, however, the most important factors here. As there's no lives system, you can take things at your own pace, experimenting without fear of being thrown back to the start. Few are going to find it as absolutely compulsive as Gameboy Tetris, but it still ranks among the better puzzlers on the market, thanks to its laid-back style spiced up with an occasional increase in pace.

Considering the low sonic and visual standards, along with the old style gameplay, a more modest price tag would have gone down well. Still, if you're hungering for a puzzler, you should get your fill from Chip's Challenge.

Tony Horgan

## DECISION

Decision: 67%

Playability: 69%

Absolute Value: 67%

Price: £24.95



Pick up the water shield to cross the moat, to get the spiked boots to grip the ice, to get the fire shield to cross the flames, to get the magnet to stop the conveyor belt. Get the idea?



When you cross the thief square, marked with a masked bandit, make sure you're not carrying any vital equipment. The blue circles are Gauntlet-style teleports.

**"Few are going to find it as absolutely compulsive as Gameboy Tetris, but it still ranks among the better puzzlers on the market"**



The green switches open one door and close another. The glowing blue square just above Chip is the exit.





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# Carrier Command

Mirror Image

£9.99



If it weren't for its speedy graphics, *Carrier Command* could easily be mistaken for one of Mike "Midwinter" Singalton's games. The game's big, the manual's big, and if you're going to get anywhere with it, your commitment has to be pretty big too.

It's all about taking control of a mass of newly formed volcanic islands. You attempt to do this with a small fleet of planes and amphibious vehicles, which are controlled from your HQ on the bridge of an aircraft carrier. You can control any of the vehicles directly, or program their autopilot computers. You'll need to spend quite a while just figuring out what to do, and once you've done that, you've got to put your plans into action. *Carrier Command* is definitely not everyone's cup of tea, but if you go for this sort of thing, there's plenty to get your teeth into.

Decision: 80%  
Difficulty: 9/10



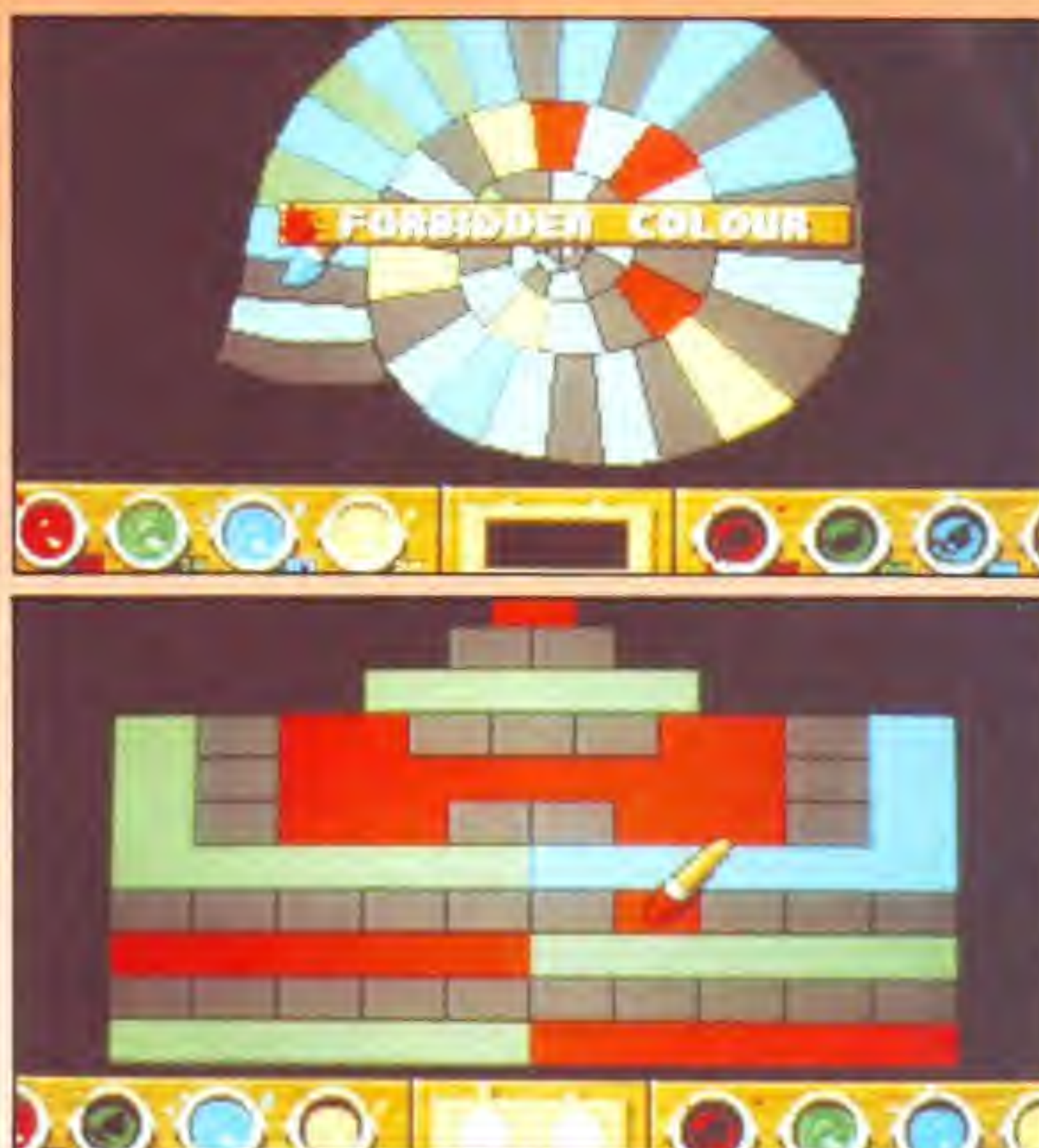
# Quadrel Loriciel

£24.99



Did you know you can fill the regions of any map with no more than four colours, without ever having two identical colours bordering each other? You do now. Try it if you doubt it. *Quadrel* uses this "theorem of four colours" as a basis for a simple game. It's primarily a game for two players, although there are a couple of solo modes. Played with two, the idea is to colour a "map" (really a rectangle divided into many smaller boxes), according to the theorem. You're given a certain amount of paint, which is randomly divided into four colours. If your opponent has a predominance of blue for example, colouring the larger squares with your own blue paint blocks off every adjacent zone for his own blue paint. When one player can't colour any of the empty areas, the other has won. It's an interesting idea, and is moderately entertaining for a while, but has no real depth or staying power. In fact, it's very similar to the pen and paper game "dots and boxes". If there's not a PD version available now, I'm sure there will be very soon.

Difficulty: User-definable  
from 3-6/10  
Decision: 40%





# Monster Pack Volume 1

Psygnosis £20.99

Three very different games from Psygnosis' back catalogue have been compiled to form their first Monster Pack: *Infestation*, *Nitro* and *Shadow of the Beast*.

*Infestation* is a sci-fi arcade adventure of the 3D vectored kind. On a nearby moon, thousands of alien embryos are quickly developing inside their eggs, and if left alone, will form an awesome fighting force, and invade your home planet. You've been sent to the aliens' base to kill the hatchlings with poison gas. Once you've done that, the powerstation has to be rigged to blow up the moon. Its style runs loosely along the lines of *Mercenary* and *Damocles*, and although the graphics aren't the fastest ever seen, the eerie atmosphere keeps you snooping around the game for some heavy sessions. Even if the plot has been lifted from *Aliens*, it makes a pretty involving adventure. For some, *Nitro* will be a far more digestible game. It's a variation on the Hot Rod/Super Sprint theme, with a futuristic slant. Races take place across multi-directionally scrolling tracks, set in city centres, deserts and woodlands. Fuel is in short supply, and if you run dry during a race, it's game over. The scrolling is smooth and the controls responsive. It lacks a certain flair that would make it a classic, but *Nitro* is still up there with the best Amiga racing games.

Finally there's *Shadow of the Beast*. This is the original Beast, not to be confused with the sequel. Excellent technical standards are the star of the show. Multi-plane parallax scrolling can be found all over the place, with loads of massive monsters scattered throughout the levels. To be honest, there's not a great deal to the gameplay, but the stunning graphics and spooky sounds are so impressive, that you keep playing it only to see what's round the next corner.

All three games alone are worth the price of the compilation, so if more than one appeals, it's well worth a shot.

Difficulty: *Infestation*: 8/10  
*Nitro*: 6/10  
*Shadow of the Beast*: 7/10  
Decision: 90%



## 3D Pool

Mirror Image  
£9.99

3D Pool is a pacy scrolling shoot 'em up. Well, no it's not actually. Despite the misleading title, it's a 3D pool simulation, another budget re-release from Mirrorsoft. It's played in a ghostly void, with the pool table drawn in solid vector graphics. The full complement of sixteen balls are light-source shaded, and move around the table in realtime. There's no visible cue or crosshair to help you line up the shot. Instead, you view the table from the tip of your imaginary cue, so when you hit the ball, it always travels directly "into" the screen. It's a strange idea, but it works. Even so, it could still do with a crosshair fixed to a vertical axis in the centre of the screen. The balls move around realistically, although it can be a little slow, as you might imagine. The only irritating feature is the very low top-end of the power bar, which doesn't allow very fast or hard shots. It's a great game anyway, which may be bettered by Archer McLean's forthcoming 3D Snooker, but for now it's in a class of its own.

Decision: 89%  
Difficulty: 7/10



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▲ *Command HQ*

is well worth the wait. As far as I am concerned, text adventure purists will be salivating playing it, with a wealth of options and windows, and pics, and maps, and humour, and story and everything. Where can they possibly go from here? Also talking about new clips, here are some latest shots of *FLAMES OF FREEDOM*, the Midwinter sequel from Mike Singleton. Looks good don't it?

### INFOGRAMMES GO TO ANCIENT CHINA

What has a cast of over 250 characters, each with individual personalities, speech habits, and social standing, a sophisticated battle system that incorporates everything from seasonal terrain changes to fireballs and magic, and four separate scenarios for one to seven players *BANDIT KINGS OF ANCIENT CHINA* is what, a sort of eastern *Defender of the Crown* mixed with ladles of war strategy that has you, as the Emperor's last chance, to unite China against the rampant hordes of the evil minister Gao Qiu. Sounds like rivetting stuff.

### MICROPROSE IN GLOBAL CONFLICT

Yes folks, the ultimate in global warfare will soon be at our fingertips. *COMMAND HQ* gives you the opportunity to compete in either World War I, II, or even future conflicts as Supreme Commander of your forces. You can alter deciding your strategy, move your land, sea and air forces to conquer territories, and assimilate nations and resources. When a particular battle commences all the action is seen through detailed 3D animations, like a short film.

Also due out now is the Amiga version of *RAILROAD TYCOON*, a Sid Meir barnstormer of the perils of setting up a railroad in the Old West. These screen shots really seem to capture the Old West flavour and colour. Reviews of both these games shortly.

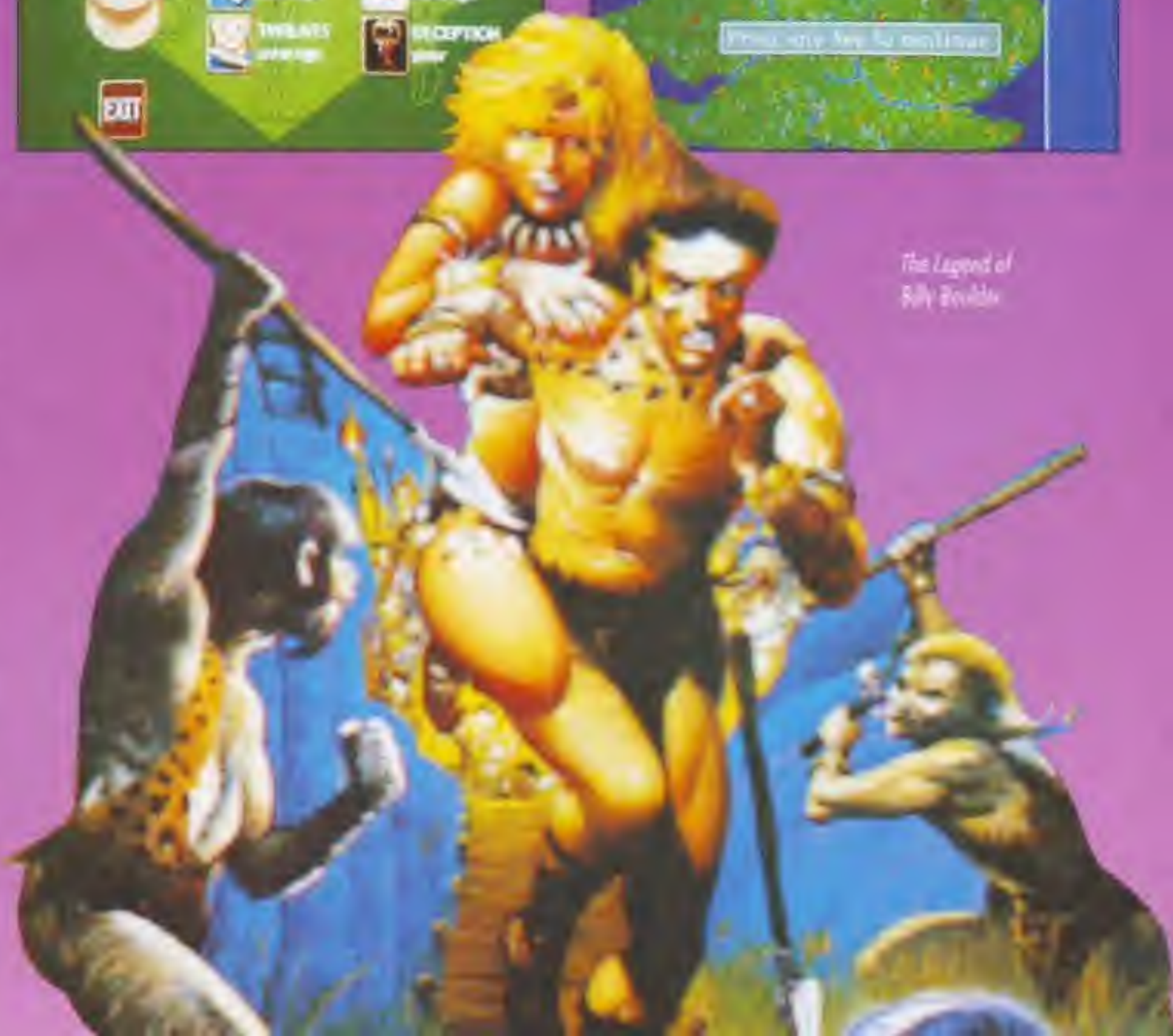
◆ *Flames of Freedom*

### US GOLD GET IN ON THE ROLE PLAYING ACT

Two more role players from US Gold, care of New World Computing, the people who gave us *Might And Magic*. *THE LEGEND OF BILLY BOULDER*, is set in the stone age and has your good self cast as the hero to defeat a wicked wizard who has bewitched a fair princess (who ever heard of a princess in the stone ages). Thousands of hidden caveaways, dens, jungles and lakes with 22 cities, each comprising 50 different stores, jails and casinos. *KINGS BOUNTY* is the second on offer, where the mission is to track down a group of cunning master villains across the kingdom of Four Continents. It is a race against time as you recover pieces of the map that will lead you to the hidden Sceptre of the Order and the salvation of the Realm.

### THALION FLYWAY

I have it on good authority. Thalion are to make arcade games no more. Instead they are to concentrate solely on flight simulations, not 'Wings' type action sims mind, but pure state-of-the-art-accurate-never-been-done-as-well-as-this-before type sims that really mean business. Two are already about to be launched. The first is a detailed Air Traffic Control sim (review next month) and the second will be the first ever simulation of a commercial airliner that can fly anywhere in the World. It is also the first to be fully endorsed by an airline, Lufthansa, who are backing this project all the way. Thalion assure me that the constant fight between cockpit detail and out-

▼ *Railroad Tycoon*

The Legend of Billy Boulder





▲ *The Colonel's Bequest*

side views, (neither of which have been satisfactorily computerised for me so far) have finally been resolved. We wait.

## THE COLONELS BEQUEST

This is a different kind of Sierra adventure from the style that we are used to. It is played out as a sort of theatrical production over eight acts and with a multitude of different endings. I suppose you could call it the computer version of *THE MOUSE-TRAP*.

The cast is made up of 12 motley characters from the Colonel himself, Colonel Henri Dijon, through to Jeeves the butler and Fifi the maid.

The plot revolves around the old Colonel, who calls a family reunion weekend at his island bayou mansion in 1925. During the welcoming dinner party, the Colonel announces that he feels that he does not have long to live, and that he is bequeathing his millions to each member present. Each will inherit equal amounts, however should anyone die before the old man, then their share will also be divided equally between the surviving parties. All of a sudden, there is the scent of foul play in the air, as family members eye each other suspiciously, each with more than a hint of greed about them. You are cast as Laura Bow, a girl friend of Lillian, the Colonel's niece, and it is as Laura that you will set about solving the mystery of just who is killing off the guests. As in any good whodunnit, there are plenty of reasons why everybody wants to kill everyone else, and you must spend time talking to all the characters to find out the inside stories. As I said before, there are many ways to finish this adventure, because as you get to know the characters, you will uncover hid-

den secrets about each. Is the Colonel doing naughty things with Fifi; are Rudi and Gloria doing naughty things with each other; does Auntie Ethel wish that she could still do naughty things; and what is the mysterious Dr Wilbur Feels prescribing for the rich old man? It is all complicated, and best played by following one lead through and seeing where it takes you.

There are plenty of hidden passages, secret rooms, and dangerous turns, but all gloriously wrapped inside Sierra's wonderful colourful graphics. This first Laura Bow Mystery is the prelude to another Sierra series, and if they are all up to this standard we can all go to bed happy.

**GRAPHICS 90%**  
**PLAYABILITY 80%**  
**OVERALL 88%**

I N F O C O M  
REVISITED LOOKING BACK  
OVER THE MANY CLASSIC  
INFOCOM RELEASES.

THERE WERE A FEW FAVORITES FOR ME. HERE IS A LOOK AT JUST A COUPLE.

## SHOGUNIN

James Clavell's masterpiece brought to your screens by that man Dave Lebling once again. This was the first Infocom adventure to have full colour graphics, and very pretty they were too, using an air-brush style rich in Japanese detail. The game was developed with Clavell overseeing every bit of it, and this is evident in the writing style. It includes loads of puzzles in true Lebling fashion, and the huge effort that went into constructing this adventure is plain to see. You play John Blackthorn, a Pilot Major of a merchant ship bound for the East in the year 1600. He is destined to become the first Englishman to set foot on Japanese soil and to ultimately become Shogun, supreme ruler of Japan. The plot does follow the book, but the horrid puzzles that abound are unique, and so if you haven't read Clavell's novel it matters not. The famous Infocom parser system still stands up to the test of time, although response time is a little on the slow side, which is due, no doubt, to the extra tasks the program has to perform now that there are graphics to tend to. Right from the start you are plunged into a problem, your crew are mutinous, starving and sickly, the ship is in the middle of a storm, and you have to find land soon before you sink or lose command. The answer is to be on alert, order and command right from the word go, gain the respect of the crew, navigate your way through treacherous waters and begin your path to becoming Shogun. Help is at hand with on-screen hints if you get really stuck, but the fun is trying to make it on your own. Well worth getting today, as a reminder of just how to

write a cracking good adventure story.

**A.M.**

**GRAPHICS 80% OVERALL 90%**

## THE LURKING HORROR

INFOCOM/VIRGIN £9.99

This was the only genuine Infocom adventure that was serious horror, and it sure made the hairs on the back of my neck stand up. Admittedly I was playing it with all the lights turned out, at around midnight, but still.... The nightmare begins with you, as a student at the GUE Tech, braving a violent snowstorm to get to I.T. centre on campus to finish your computer assignment. Unfortunately, after you arrive, the storm gets worse, and you have to spend the night in the complex..... but you are not alone, the trouble seems to start when you begin exploring the darkened building, you go downstairs and suddenly are drawn into a world of sacrifice, tribal rituals, magic and evil. Escape is possible, and when it happens you do not know if you dreamt it or not. You do have an ally though, a fellow student locked in with you, who appears ignorant of all these strange happenings, although later on he will be of great importance to you. The author, Dave Lebling, who incidentally co-wrote the original *ZORK* series, and was a founder member of Infocom, based this adventure on the works of HP Lovecraft, and Stephen King, two of his favourite writers. At this point in their history, Infocom were just text only, but part of their charm was that each game box carried a number of items relating to the story. They were the first to do this type of marketing, and although it was superfluous to the story, it helped create the right mood. *LURKING HORROR* has many puzzles, none more taxing than in the Alchemy lab where a cutting instrument is needed to get through into the final phase of the adventure. This puzzle is typical of the Infocom style, hard tests that when cracked provided immense satisfaction. Unfortunately, in later games, they built in hints so players would finish quicker and go buy more games, which led to the inevitable quick peak if you got stuck for longer than five minutes. *Lurking Horror* was part of the glory days before all this, so you are in for many hours of trial and error with this one. (Do not play after dark)

**PUZZLES 90% OVERALL 90%**

THAT'S ALL I HAVE ROOM FOR  
THIS MONTH. DON'T FORGET, IF  
YOU HAVE SOMETHING TO SAY  
ABOUT ADVENTURE OR  
STRATEGY

WRITE TO ME ANDY MOSS AT  
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**SEE YOU NEXT MONTH.**



# pd news



THE MAGAZINE FOR AMIGA PD ENTHUSIASTS

*George Thompson Services*  
presents  
their exclusive 'Theme Pack of the Month'  
starring

**'Mandelbrot & Fractals Set I'** for May  
The definitive four disk pack for Mandelbrot Artists and Enthusiasts. We have selected only the finest programs. They include the latest version of Mandel Mountains, which was recently featured in Amiga Computing, use MandAnim for handmade animations, create exploding Julia set animations and realise the beauty of Mandelbrots with CPM.  
Four disk set only £10.99 (Members £9.99)

**'Words'** for June  
If you are interested in completing, solving or making up crosswords or anagrams, this is the ideal pack for you. Included are top programs such as Cross, WordGame, CWP, Scrazzle and Disearch.  
Two disk set only £5.99 (Members £5.49)  
Please note both the above require 1 Meg.

## Other Theme Packs Available

### "Printer Workshop"

for January

We have included on two packed disks the finest PD/Shareware programs to help Amiga users achieve high quality print results. Print disk labels with DiskPrint, Post is a Postscript Interpreter, PLUS PrintStudio, PrintImage, PrintSpool GPrint and SoftFont. A total of 25 programs.  
2 Disk Set for £5.99 (Members £5.49)

### "Home Management Vol.II"

for February

More useful programs for home use and the small business. There is a typing tutor and grammar checker PLUS 'Web' a superb spreadsheet and 'DataEasy', an easy to use database. 'CheckBook' will keep track of your finances and 'Mileage Master' will tell you just how much your car costs to run. A total of 19 programs.  
2 Disk Set for £5.99 (Members £5.49)

### "Famous Board & Puzzle Games Vol.II"

for March

Fifteen games that include BackGammon, Chinese Checkers, a superb Draughts plus Dominoes, BlackJack Lab, the latest version of 3D TicTacToe, Step 3, Puzz, Raps and Bounce.  
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for April

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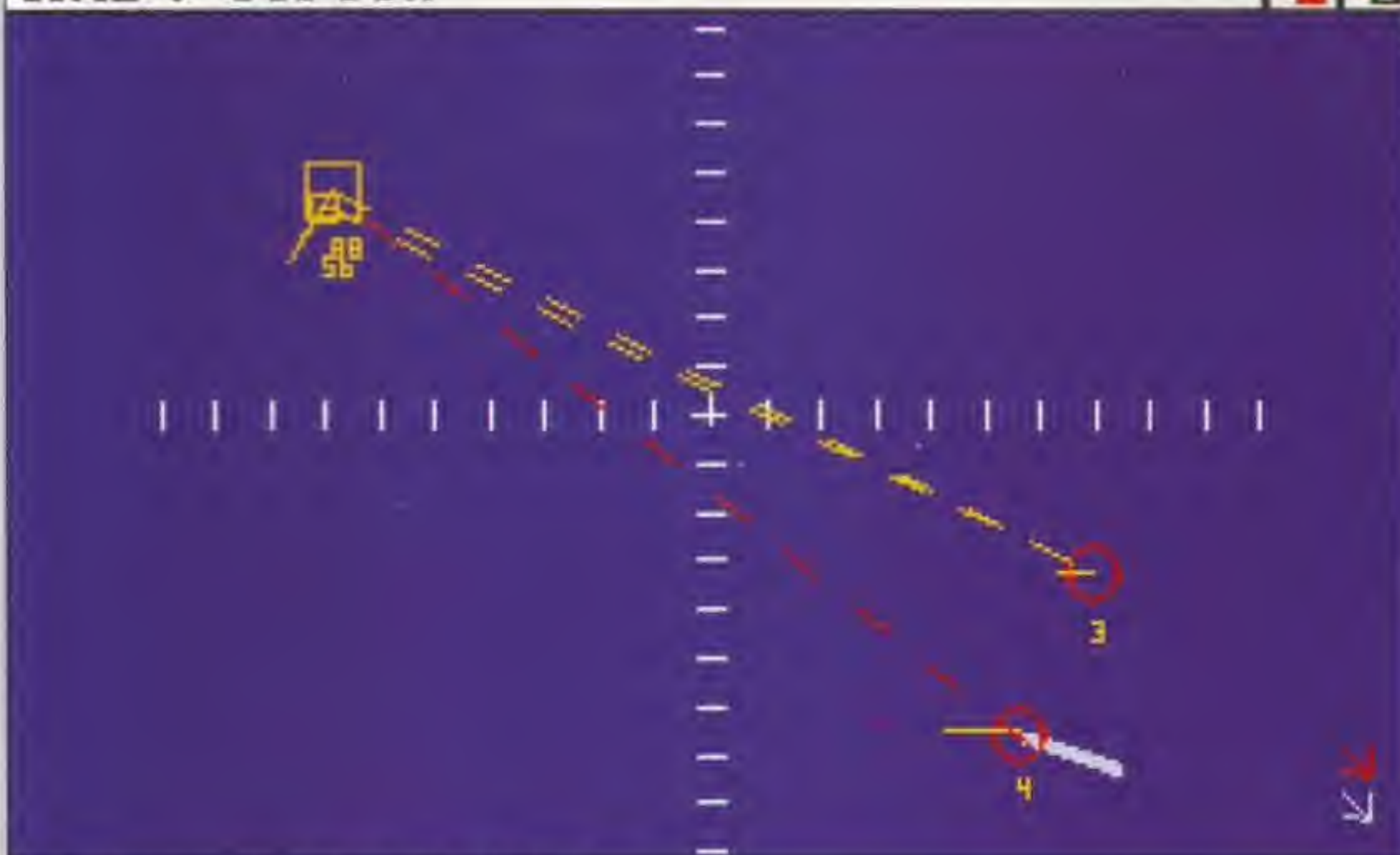


# GAMES WITHOUT TEARS

war without fears

As a special treat to celebrate our new look, Nick Veitch tests some recent wargames, two available from Australia and two from the UK... War, of course, is hell. . .

## Chart Screen



The Hood comes under fire from the Bismark (honest!)

# ACTION STATIONS

PANTHER GAMES £30.00

One thing that doesn't get covered much in strategy games is naval conflict. It may feature as a small theatre of operations (as in Red Lightning) in some more macrocosmic wargames but rarely is there a game devoted entirely to the fight on the ocean waves.

**"The markers denoting your ships also contain vectors representing the actual speed and direction of the craft and its ordered speed and direction."**

Action Stations! sets out accurately to recreate any surface combat scenario from 1922-45. With full data on all of the ship types of the period it should be possible to recreate many famous engagements. Well, any that don't include aircraft that is - only spotter aircraft are accounted for - so a re-run of the battle of Midway would be a little pointless.

Many scenarios of action in the Med, the Pacific and the Atlantic are included but should you get board there is the opportunity to create your own - using all of the very detailed ship information which comes with the game.

The screen on which most of the action

takes place is the battle plot. This is where the relative positions of your and the enemy's ships (if known) are recorded and the traces of any gunfire appear. Smoke coming from the stacks or from deliberate munitions fire is also included on this plot. The markers denoting your ships also contain vectors representing the actual speed and direction of the craft and its ordered speed and direction. For the most important part of the game it doesn't seem to have received that much attention. It would be a lot easier to discern the action if a medium resolution screen had been used anyway. The zoom functions are slow and cumbersome to use too.

The actual mechanics of the combat are handled very well. Not only can you specify the targets of each ship but you can split the fire as well by taking direct control of the designators. It is even possible to specify the guns to be controlled by each designator.

Damage control is reported in excellent detail and precautionary countermeasures such as counterflooding (to correct a dangerous list) and flooding the magazine (to prevent very dangerous explosions) are implemented.

Since it is not always the case that naval engagements occur on perfectly flat seas on a



# DECISION

Decision: 46%

Graphics: 16%  
Miserable battle plot makes playing a pain

Sound: 0%  
What sound?

Gameplay: 72%  
Scenarios and action is very realistic

Difficulty 8/10



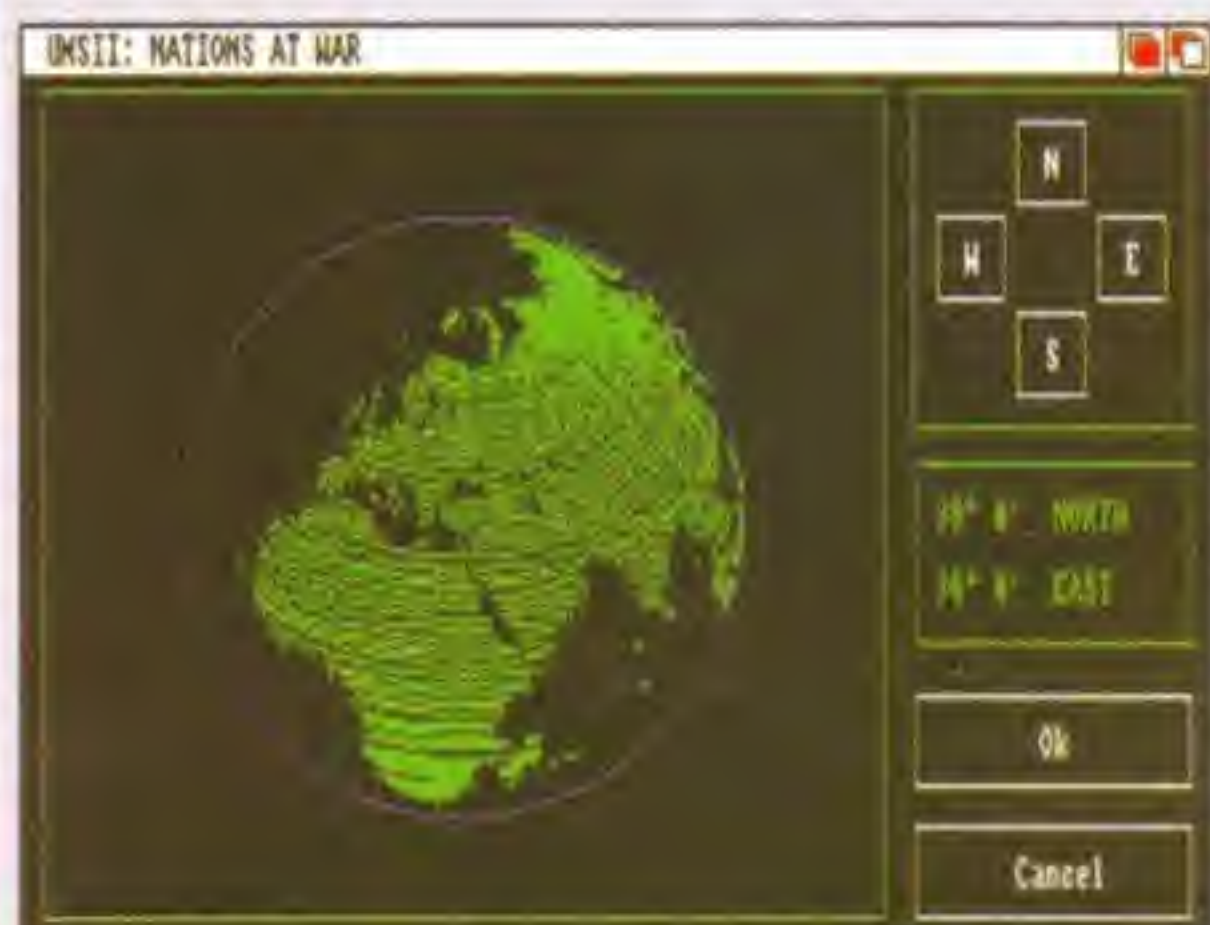
HMS Hood is in a bad way - look at the smoke!

Ship Status									
Ship		Type		Status		Location		Notes	
Ship ID	Ship Name	Type	Status	Lat	Long	Alt	Heading	Speed	Notes
1	HMS Hood	Battle Cruiser	Active	51.30	12.10	0	090	25.0	
2	Bismarck	Battle Cruiser	Active	51.30	12.10	0	270	25.0	
3	Yamato	Battle Ship	Active	51.30	12.10	0	090	23.0	
4	Musashi	Battle Ship	Active	51.30	12.10	0	090	23.0	
5	Kaga	Battle Ship	Active	51.30	12.10	0	090	23.0	
6	Shikuma	Battle Ship	Active	51.30	12.10	0	090	23.0	
7	Yamaguchi	Battle Ship	Active	51.30	12.10	0	090	23.0	
8	Atago	Battle Ship	Active	51.30	12.10	0	090	23.0	
9	Shiratsuyu	Destroyer	Active	51.30	12.10	0	090	15.0	
10	Yudachi	Destroyer	Active	51.30	12.10	0	090	15.0	
11	Yaguchi	Destroyer	Active	51.30	12.10	0	090	15.0	
12	Yubatake	Destroyer	Active	51.30	12.10	0	090	15.0	
13	Yudachi	Destroyer	Active	51.30	12.10	0	090	15.0	
14	Yaguchi	Destroyer	Active	51.30	12.10	0	090	15.0	
15	Yubatake	Destroyer	Active	51.30	12.10	0	090	15.0	



# WHITE DEATH

Storm Computers £30.00



1. Night time on the front, but the fighting goes on.



2. The strategic map shows command placements

Decision: 34%

Graphics: 74%

Very pretty and even innovative in parts

Sound: 5%

Troublesome

Gameplay: 12%

High on strategy, low on ease of use.

Difficulty: 8/10



## GAMES WITHOUT TEARS

war without fears (cont)

The great tragedy of life is that it is so easy to lose it. War brings about an even greater tragedy as so much life is swapped for short term tactical gain. The winter of 1942 saw one of the greatest human tragedies, the most useless waste of human life even in such a conflict that was thick with it. The German forces had been halted in their march deeper into Russian territory and now the snows had come it was the Soviets 3rd Shock Army that was gaining ground.

A series of punishing assaults on the weak German lines left thousands of troops completely surrounded. The Russians, however neither the inclination nor the strength to go in and mop up these concentrations. Many more soldiers died during the siege from cold, hunger and disease than from enemy fire. Relief attempts to try and free these units had been tried, but most were ineffectual.

White Death deals with one such engagement, where battle-weary troops and the remnants of earlier campaigns were pulled together to recapture the strategic transportation town of Velike Luki.

There are several scenarios, each dealing with a particular phase in the battle for

the town. These are not true scenarios in the sense that at the beginning each side gets to choose their starting positions - an option obviously not available to the generals of the day.

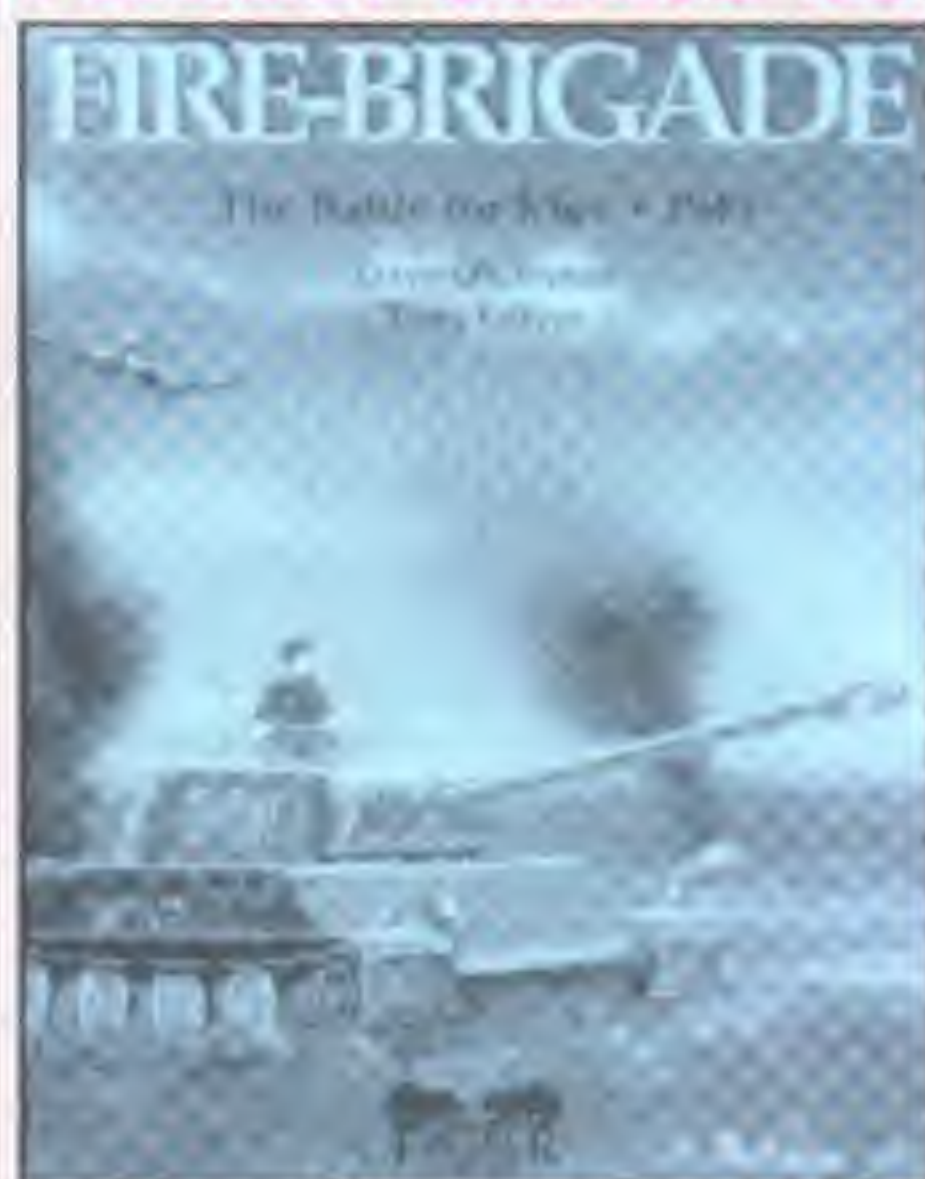
Someone has come up with the bright idea of representing the amount of movement and relative strength a unit has by little bars on the sides of its icon. This means it is possible to tell at a glance more or less how strong your forces are, especially as the unit icons are so big. Unfortunately, though, the amount of map on a screen is therefore necessarily small and since there is no scroll option, it is a wearisome trip up and down the menus just to move a few hexes in any direction.

Combat is handled in an unusual but effective way. Unhappily, it can also be very slow and frustrating. The computer, which can control either side, is a worthy but uncharismatic opponent but unfortunately the set-up phase gives whoever places their troops last too much of a strategic advantage.

Ultimately, whilst very challenging, the unnatural menu system and the annoying quirks of the rest of the game make it all but unplayable.

## FIRE BRIGADE

Panther Games £30.00



ach for this fight with their former ally. In any case, the winter months of 1943 had them fighting to hold on to their limited gains in the Steppes. With combat weary troops the Germans prepared the defense of Kiev. It was time to call in the 48th Panzer, the renowned "Fire-Brigade", instrumental in the halt of previous Soviet advances.

The game is a Macintosh port and it shows. I always get nervous when I read things like "We wanted to capitalize of the inherent user-friendliness of the Mac system" in the manual. What this means is that screen updates are tortuously slow - the Mac doesn't have a Blitter so, reason the programmers, it can't be any good for anything.

Apart from that the user interface is quite good - oh, except for the orders icons. They are more or less completely unintelligible so keep the manual handy for the first couple of games otherwise you might be ordering your troops to surrender instead of dig in.

Well okay then, apart from that the graphics are exceptionally good, with clear maps, intelligible unit markers and nice scroll-bar windows. There is even the option to change palettes if you can't make things out on your TV or mono-monitor.

The computer shows a good deal of strategic awareness as do your own subordinates - the command structure is modelled properly so even though you may order a group commander towards a cer-

Who knows why the German war machine, which had conquered the sophisticated defences of Western Europe in a matter of weeks, failed so miserably to destroy the red threat to the East? It was certainly a different sort of war. Who but the Russians, unconcerned about attrition amongst their own ranks, would launch offensives in the bitter cold of Ukrainian winter?

Perhaps the German units were too tired, poorly equipped or just had no stom-



# UMSII Microprose £29.95

How many strategy games have a cult following? Apart from the crowd of anoraks that cluster around "War in Middle Earth" very few. UMS or the Universal Military Simulator seems to be destined to become one of them. The original was unique in that it combined a tactical system which could handle almost any kind of land combat and a scenario designer which enabled the user to recreate, or just create, any skirmish or battle they could think of.

Now the sequel, UMSII (or "umsy") has gone one step further. Taking a global approach, all of the terrain data of the entire world is now represented - no more fiddling around altering the landscape, now you can use any country, continent or ocean - UMSII handles naval engagement as well. Diplomacy is covered too, but only in a rudimentary fashion.

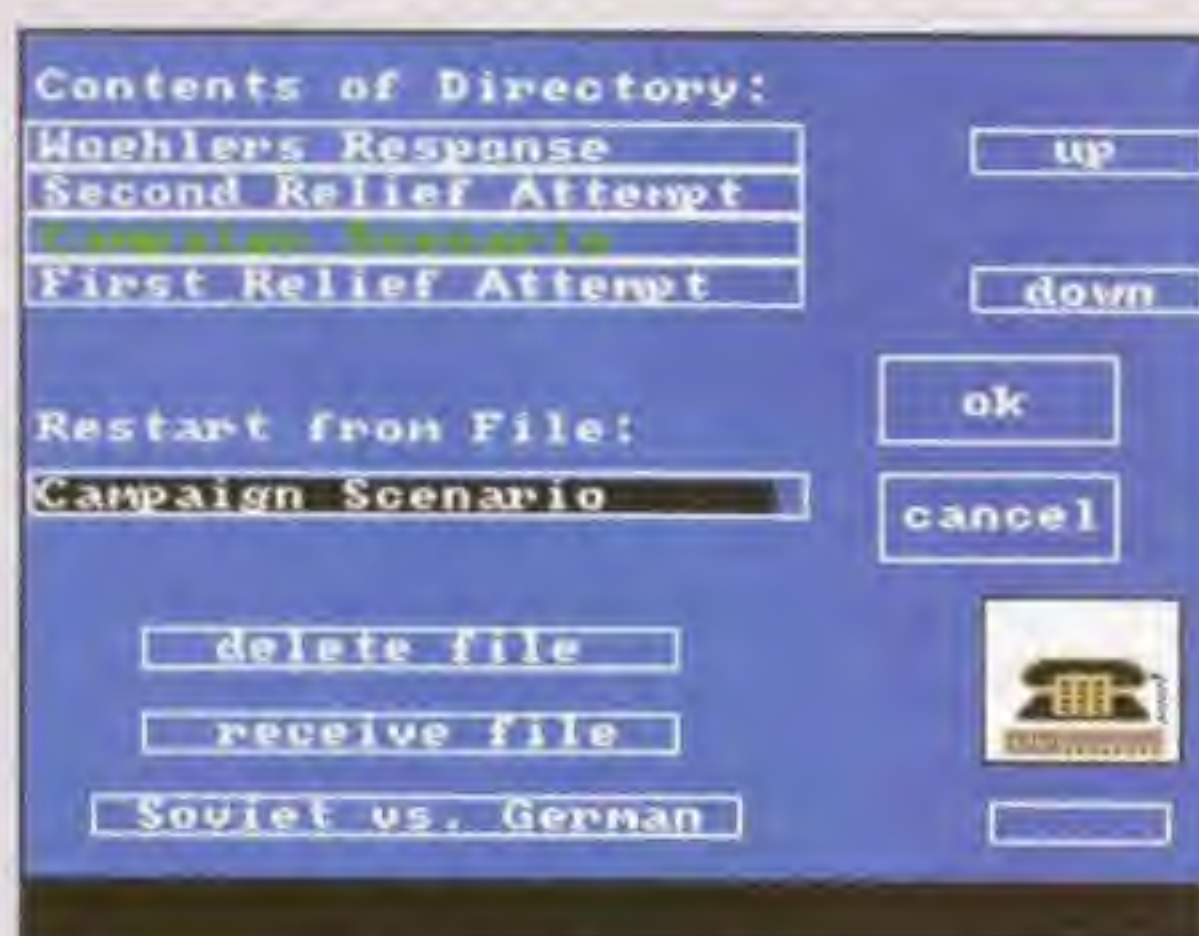
The subtitle "Nations at War" is well chosen. The whole strategy of battle is now considered on a more national level. Whilst there is still control of individual units in terms of strategic orders, supply and so on there is no control over tactical actions - the player does not control the actual field combat down to individual shots as in UMS. Rather than an update, UMSII is more of a big brother to the original.

An amazing level of combat detail is taken into account, even the weather. Options from the

display menu allow weather symbols, local temperatures and pressure systems to be displayed. You might not think they make a difference but they can be very influential. Of course, if you don't think they are nearly important enough you can always factor them out of the equations - UMSII has a battle equation which can be altered to give greater weight to particular aspects of combat. For example, in Ancient Greece, the ability of a unit's commanding officer might be considered more influential than in a present day conflict when better communications are available - this is easy to alter.

A major disappointment is the omission of a scenario generator. Only three scenarios are provided; Napoleon, Alexander and the D-Day landings. These will occupy any serious strategist for many months but part of the philosophy of the original was the ability to invent and create. A scenario generator will apparently be available some time in the future.

In spite, or perhaps because of the sophisticated and complex memory management and compression routines the game can be tediously slow at times. I mean really slow - I mean, are these armies being raytraced or something? I suppose that is the price to be paid for realism.



1. Here is your theatre of operations



2. Alexander besieges the Persians in 334 BC

Decision: 84%

Graphics: 86%  
Informative and decorative.

Sound: 60%  
Stirring theme tune but can get annoying after a few hours.

Gameplay: 80%  
Slow but worthwhile.

Difficulty: 7/10



tain goal, the actual specifics are up to him. This makes it important, as in real life, that unit commanders are trustworthy and intelligent which doesn't seem to be the case most of the time.

If you can survive the play-by-mail screen updates and the insane noises that come out of the speakers during combat resolution you may find this an unusually rewarding simulation.

Panther Games can be contacted on (062) 285 1999 and all prices are approx. and include a 1-week delivery air mail postage.

Storm Computers can be contacted on 081 870 4941

Microprose can be contacted on 0666 504326

Decision: 62% Graphics: 70%  
Slow, slow, slow - but pretty.

Sound: 15%  
Why? Hasn't humanity suffered enough?

Gameplay: 45%  
Tough and demanding - but that's just the icons.

Difficulty: 9/10





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## Life on the Ocean — sorry Domark — away . . .



**Skull and Crossbones. Domark.** Oh, to be a pirate! You're the baddest outlaw in the world when you want to be, and at the drop of a hat, you can transform yourself into a folk hero. Skull and Crossbones should quell any yearnings of a life of adventure on the ocean wave. It's a timber-shivering arcade slice 'em up, in which you'll do battle with countless enemies as you scour the Caribbean New Worlds in your search for booty. Look out for it on the shelves in Mid Spring.

## Between Mario Bros and Donkey Kong . . .

**Toki. Ocean.** If Pang (reviewed this **AUT**) is anything to go by, referring to their conversion of Toki, Ocean's claims of "identical coin-op graphics and sound" could well be true. If so, we should be in for some of the best platform arcade action seen this year. Toki is a kind of cross between Mario Brothers and Donkey Kong Jr, in which you play a poor soul who's been turned into an ape. Through your travels, all kinds of weird monsters take a disliking to you, so rescue your lady friend and turning yourself back into your former self is going to be a tough job. Find out if you're up to it around the beginning of June.

## Pole Position style football . . .



**I Play 3D Soccer. Simulmundo.** Where do they get them from? So, new names for footy games are getting a bit thin on the ground, but this one takes the biscuit. Still, the game looks interesting. It's all viewed in 3D from just behind the player under your control, Pole Position-style if you like. Three detail settings allow you to tweak the game to your own preference: the lower the level of the graphical detail you choose, the faster the game runs. Sprites are used for the players, and the pitch and goals are drawn with vectors. While the players disappear for their halftime oranges, you can reflect on the first half, winding back and forward through a "video tape" of the action. Sounds like a good crack. Keep it here for the review in a future issue.

## Specially for Nostalgia Nuts

**Megapheonix. Dynamics.** The end of level guardian is now a regular feature of just about every shoot 'em up, but where did it first appear? Pheonix could credibly claim to be the originator of the idea. It also introduced a number of other new ideas to the world of shoot 'em ups, but until now, this pioneering classic coin-op has never made it to the Amiga. Megapheonix is, as you would imagine, a deluxe fuel-injected update of the original, including a simultaneous two-player mode. Nostalgia nuts should get their fill from it within the few weeks.

## Games News

Tony Horgan heard it on the Grapevine



## Xenon Style Puzzle



Coming soon . . .  
**Skull & Crossbones, Toki, I Play 3D Soccer, Gods, Megapheonix, Encounter**

**Gods. Renegade.** The first release on the new Renegade label from The Bitmap Brothers (or The Bighead Brothers, as Pat Kelly would have it), is very near to completion. Gods is a scrolling platform arcade adventure, based on the adventures of Hercules. The spooky graphic style of Xenon II puts in another appearance here, with a menagerie of highly detailed, though slightly jerkily animated creatures. Plenty of key collection and trap disabling seems likely to form the core of the gameplay, with each level holding its own unique puzzles and tasks. Another world-beater? Wait and see.

## Close encounters of the Novagenic kind . . .

**Encounter. Novagen.** It was 1984 that Paul Woakes unleashed his Battle Zone-inspired 3D shoot 'em up Encounter. Highly praised for its speed, and frantic gameplay, it was to achieve classic status in the view of many C64 gamers. Some years later, Backlash appeared on the Amiga, a lightning-paced update on the original Encounter theme, also from crack-coder Woakes. Now Novagen are ready to release the "real" Amiga version of Encounter, entitled Amiga Encounter. It's promised that all the excitement of the original has been retained, with enhanced graphics to top it off. Review coming up shortly . . .





# Anarchy Is Back!

You have to earn your way to the next tune by playing a "Thrust" clone using the joystick.

**T**here are dozens of demos made every week so choosing which too review is not easy. These demos are picked at random, Gary Fenton claims. But if Freud said there was no such thing as an accident, how can anything be at random? Or is anarchy really back once more...

## Sit Back and Watch

Frap's latest compilation brings you the Magnetic Fields Hysteresis demo. It goes on for a while showing large bobs, solid vector objects with stenciled effects and the usual tricks you find in demos. The best bit is at the end with the Channel Four logo breaking apart and spinning about the screen before joining together again. Also on the disk is the Anarchy Madness demo part II. Big colourful bobs is the order of the day with filled vectors

to polish it off. Staying with Magnetic Fields, their 75th compilation disk holds a home to 6 demos. Cerberos present a large 4096 colour globe made from a scroll text while Concept's intro features some good pop music with a jazz organ to lead the way. Anarchy is back once more with the Shape-Change demo. This is the first to have solid shapes that actually curve and flex as they spin round at a fast rate. No doubt other coders will follow. My favourite demo in the collection is Anthrox's Bobby The Ball. It starts off with the usual vectors and then introduces our friend Bobby. Instantly transported to Stone Henge, he finds himself bouncing up and down on a wavy VU type thing that goes along with the music. After laughing at Bobby's expense he finds a female companion and, the rest is history to say the least.

## Turn Up The Volume

Moving swiftly on to a disk from Tankard that contains 2 minutes and 40 seconds of the smash hit "19" by Paul

Hardcastle. This is the best version that I've heard on the Amiga thanks to the very clear stereo sample. It loads quickly but comes to a harsh end and resets. This is a good demo for all fans of the original. The Silents return with a two disk offering called Blues House and is entirely original for once. It could have been an ordinary music disk where you simply select the tune and it plays, but not this one. The game is simple. Fly your spaceship from one spacepad to the next and each time you land on a different pad it loads up a new tune. If you want to listen to all 14 songs then you must visit all 14 pads. Alternatively you can load up any tune you wish while you're floating around but if you crash or land on a pad the old tune reloads. A genuine novelty and addictively annoying too! Finally we come to "The Wall" by Kefrens. A three part demo accompanied by an enjoyable piece of music, fast 3D vectors, a thunder storm and a crumbling wall. Another goodie available from most PD libraries.



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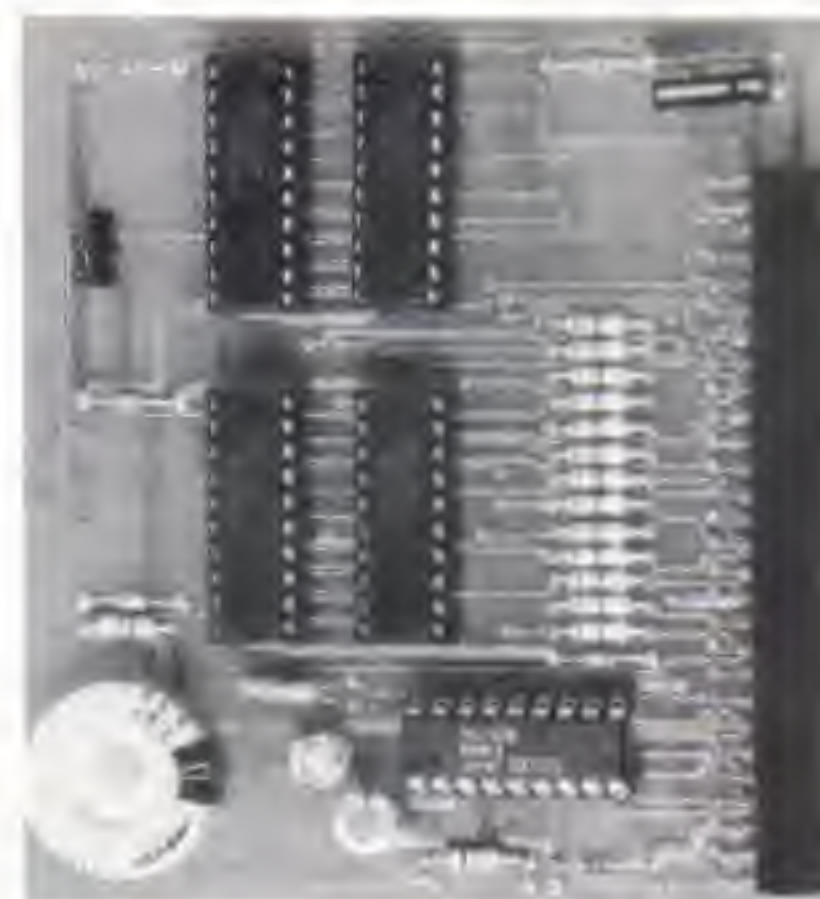


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# U.K. Games Chart

Position	Game	Company	Last Month	Rating	Price
1.	Lemmings	Psygnosis	(4)	100%	£24.99
2.	Speedball II	Imageworks	(2)	91%	£24.95
3.	Powermonger	Electronic Arts	(1)	82%	£29.95
4.	Turrican II	Rainbow Arts	(5)	90%	£24.95
5.	F-19 Stealth Fighter	Microprose	(3)	78%	£29.99
6.	SWIV	Storm	(-)	TBA	£24.95
7.	MIG-29 Fulcrum	Domark	(9)	86%	£34.95
8.	Final Whistle	Anco	(7)	97%	£12.99
9.	UMS II	Microprose	(-)	84%	£30.65
10.	Indy 500	Electronic Arts	(6)	93%	£24.95

Well, as we predicted those suicidal Psygnosis beings addicted themselves to the games world and hit the Number One spot. Imageworks' Speedball II, real quality there too, as we also predicted stays high and Rainbow Arts' Turrican deservedly makes it big. Class, like murder, will out... Newcomer SWIV from Storm is a hot shoot 'em up but UMS II will no doubt follow its predecessor by becoming a long running cult

## GAMES RATINGS

So you've noticed a change in the game review ratings? Want to know what it's all about? Ok, here's the lowdown.

**Verdict:** Marked as a percentage, this sums up the reviewers opinion of the game as a whole. It's not an average, but an overall score which takes all the aspects of the game into account, including the price

**Graphics:** also marked as a percentage, this tells you how good looking the game is, and considers the variety of graphics and the standard of scrolling and animation, as well as the design of the graphics themselves.

**Sound:** does the music gee you up in an exciting, or irritating way? Do the monsters go "pop" when you kill them, or scream out a chilling death cry? Once again marked as a percentage.

**Difficulty:** each game we review is given a difficulty rating from 1 to 10. This rating differs from the rest in that a higher rating is not necessarily better. A game rated with a difficulty level of 1, for example, would be an absolute doddle for even the youngest or most clumsy player. A rating of 10 would reflect an extremely difficult game, which would drive the average player mad with frustration, but hold a substantial challenge for the very best gamers. We take a mark of five as an average.

To help you get a handle on the gauging of the difficulty level rating, this is how AUI would rate for difficulty three classic Amiga games.

R-type: 8/10.

Rick Dangerous II: 5/10.

F-A/18 Interceptor: 4/10.

## Recommended Games of Recent Months

**Lemmings**  
Psygnosis  
£24.99

**AUI Rating: 100%**

If you only ever buy one game in your life it's got to be Lemmings. Lemmings is based on a race of simple creatures who will walk into Psygnosis' death traps. Using various skills which you can bestow upon these Walkers you can prevent them from dying and save the Lemming race. It's new, and addictive, with four different game difficulties from fun to mayhem. You'll not find another like it.

**B.A.T.**  
Ubisoft  
Price: £24.95

**AUI Rating: 99%**

This long-awaited adventure was in the development stages for nearly 2 years and, as Andy Moss found out, was well worth the wait. It has to be one of the best adventures to date as Andy is not one to give out high ratings willy-nilly. The main character is one of the Bureau of Astral Troubleshooters' best agents and has been sent to Terrapolis to foil the evil plans of two terrorists who wish to bomb up the galactic city. There are over 110 static screens which are gloriously drawn and feature animation sequences. If investigative adventures are to your liking then B.A.T. must be on your shopping list!

Each month we review a whole pile of games; some awful, some good, occasionally some terrific. Not all the best ever get into the charts. In this section we recommend games which have been the best in recent months to keep you updated on the best when you part with your hard-earned cash. There is so much hype around, our unbiased and analytical approach should be a good guide on what to buy. Games we recommend have to be worth every penny - you can believe that!

**Speedball 2**  
Image Works  
Price: £24.95  
**AUI Rating: 91%**

Spikes, rivets, balls and helmets may all sound a bit kinky, but sex fiends will be disappointed to find that Speedball 2 is a violent future-sport. Steel-plated arenas are the venues for this barbaric variation on indoor soccer. Setting new standards in graphics, with top-notch sound effects and gameplay, Speedball 2 is a bare essential for armchair sportsmen.

**GO!**  
Oxford Softworks  
Price: £24.95  
**AUI Rating: 90%**

This isn't your normal run-of-the-mill game, and you certainly won't see it hit the charts. But, if board games is your type of challenge then this is going to keep you on toes for ages. Go is played on a grid using black and white counter-type peices and thoe aim is to gain as much territory as possible. The gameplay is simple, but incredibly infuriating and difficult. Even the easiest level gives a challenging match. However, you can set up various positions to give advantage to either side, and thus altering difficulty enough for beginners and experienced users to play in challenging games. If you like games that make you think, Go! is for you.

**Prince of Persia**  
Broderbund  
Price: £24.95  
**AUI Rating: 92%**

A brilliant arcade adventure from the creators of Loderunner, Wings of Fury and Choplifter, Prince of Persia is one of the most compulsive games released for months. What at first seems to be a mundane and graphically dull game is uplifted by some superb character animation and devious level designs. Don't be deceived by its unexciting look in still shots. Get a copy ASAP.

**PGA Golf Tour**  
Electronic Arts  
Price: £24.95  
**AUI Rating: 94%**

PGA Golf Tour has ousted Leaderboard from its throne. Hard to believe maybe, but true. Never before has golf been simulated so well on a home computer. Four 18 hole courses are there for your selection, with the option to play against computer controlled opponents. Dynamic features such as dual camera angles, action replays, contoured greens, and 3D fly-by hole previews give it a TV style feel. Realism in the graphics and the movement of the ball create a completely believable environment. A great golf game, that will run and run.





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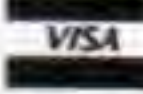
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## Hartmut Schumacher tells you all about "IconMaster" from TBAG disk #32.

**S**ooner or later every Amiga user feels the urge to create his (or her) own Workbench icons - especially those icons that change their appearance when you click on them.

There are many commercial and public domain programs you could use for

tures). And, of course, it is able to load the ordinary ".info" files.

"Animated" icons can be created by loading one brush as the primary image and another brush as the secondary image of an icon. These two images may be swapped. You can also copy the first to the second image or delete the secondary image.

If you lack imagination, there are six default images for the different icon types.

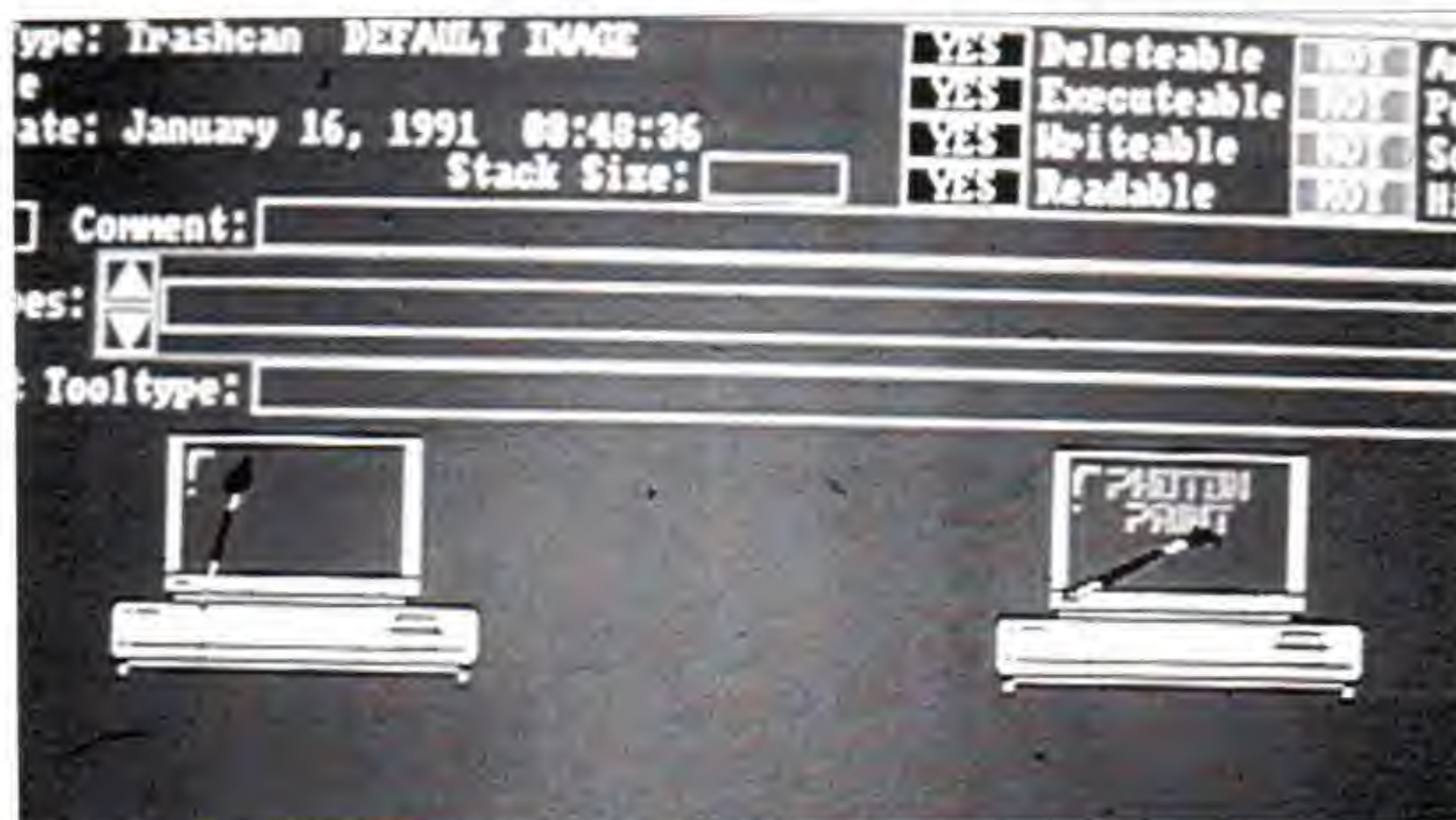
Before you save the images as an icon,



Picture 2: The "IconMaster Draw Window" offers all necessary paint tools.

# Iconmaster

## Create Icons the Comfortable Way



Picture 1: "IconMaster" converts IFF brushes into ".info" files.

this purpose: "IconEd", "IconMagic", "IconPaint", "Image-Ed" to name just a few.

The draw tools of these programs, however, are in most cases not very comfortable, to say the least. But since nearly everyone seems to have access to "Deluxe Paint", why not use this great paint program (or any other) to create pictures and then convert them into icons?

### The Shareware Solution

"IconMaster", programmed by John Scheib, can load the first two bitplanes of any IFF picture (except HAM pic-

**You can also save the finished image as an IFF brush to use it in a paint program.**

you can chose the icon type (disk, drawer, tool, project, or trash), add a comment and tool types, and finally decide which protection bits (deletable, executable, et cetera) are to be set (see picture 2).

### Draw functions

Even if you really don't have a decent paint program, "IconMaster" doesn't disappoint you: The menu item "Edit Image" opens the "IconMaster Draw Window" (which is, in fact, a screen). There you find all the necessary draw tools such as freehand, line, box (filled and unfilled), circle (filled and unfilled), fill, brush, text, undo, and clear (see

picture 2). A help window - accessed via the help key - shows you the keyboard shortcuts of these functions.

A menu offers the possibilities to swap the colours 0 to 3. This is very handy if you want to convert icons from the Workbench 1.3 (or lower) to icons which look all right on an Workbench 2.0. (On the Workbench 2.0 the colours 1 and 2 have been swapped.)

You can also save the finished image as an IFF brush to use it in a paint program.

### For a few dollars more

"IconMaster" is shareware. After a trial period John Scheib expects a fee of \$10 (about £6). For \$25 (about £13) you receive an improved version of "IconMaster" which can handle up to sixteen colours.

But even this version from the TBAG disk #32 is a great help, if you want to give your Workbench a more individual look or to create icons for your own programs.

### Quick Info:

**Program name:** IconMaster

**Author of program:**

**JohnScheib**

**Type of program:**

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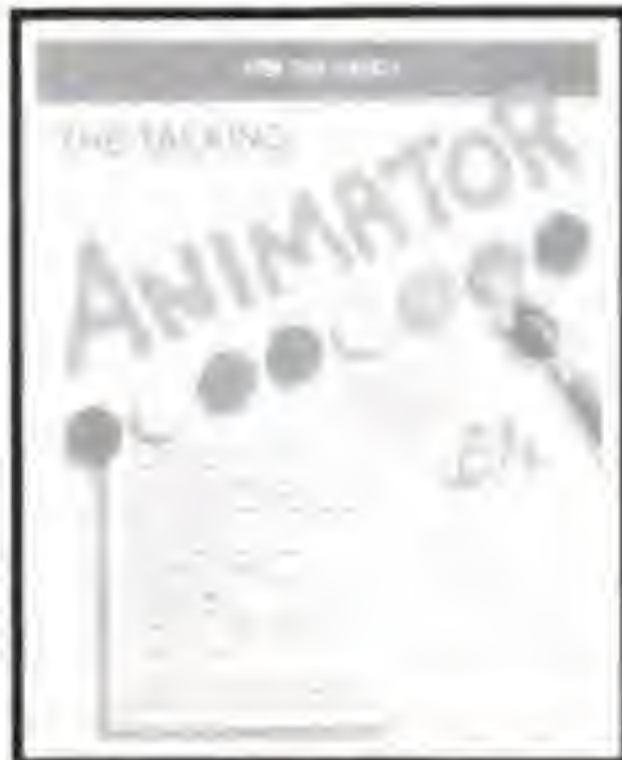
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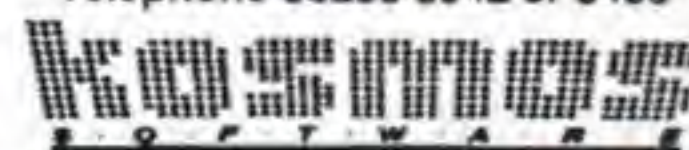
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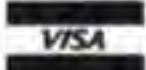
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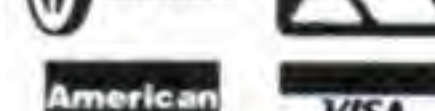
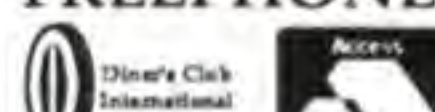
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**T**o do a job properly, you need a workbench. The workbench might be in a laboratory, and so used to conduct experiments on. It might be in a garage, used to perform maintenance on car engines. It might be in an artist's studio. It might be in a kitchen, an office or a craftsman's workshop. Wherever it is, all these workbenches have one thing in common: they are covered in tools.

The Amiga Workbench is no exception. It is a place where you can experiment, draw pictures, write novels, maintain your programs and create works of art. It's your way of controlling and using your computer, without having to resort to typing lines and lines and user-hostile, instantly forgettable, utter gobbledegook. It's a human-machine interface.

You might think 'interface' is too grand or techie a word for it, but I'm afraid it's only the start of things to come. As computers become more and more complicated, this sort of 'front end' is the only way we'll be able to communicate with them. Better get used to it now!

Amiga Workbench was designed to be both powerful and simple to use. Although technically called a GUI WIMP system, these delightful terms of jargon mean nothing than the use of a mouse to move a pointer around the screen, accompanied by clicking some buttons. It's really that simple. The hardest part is mastering the 'double-click', and once you can do that, you can do anything.

On all current versions of the Amiga, Workbench is supplied on a floppy disk. The obvious argument against this is the long delay between loading and actually being able to use it. Would it not have been better to build Workbench permanently into the machine, and so having it always present at switch on? Probably not, because being supplied on disk means that it is 'future proofed' to a high degree. If a new version comes along, there is a good chance that you

# The Workbench

## Part One



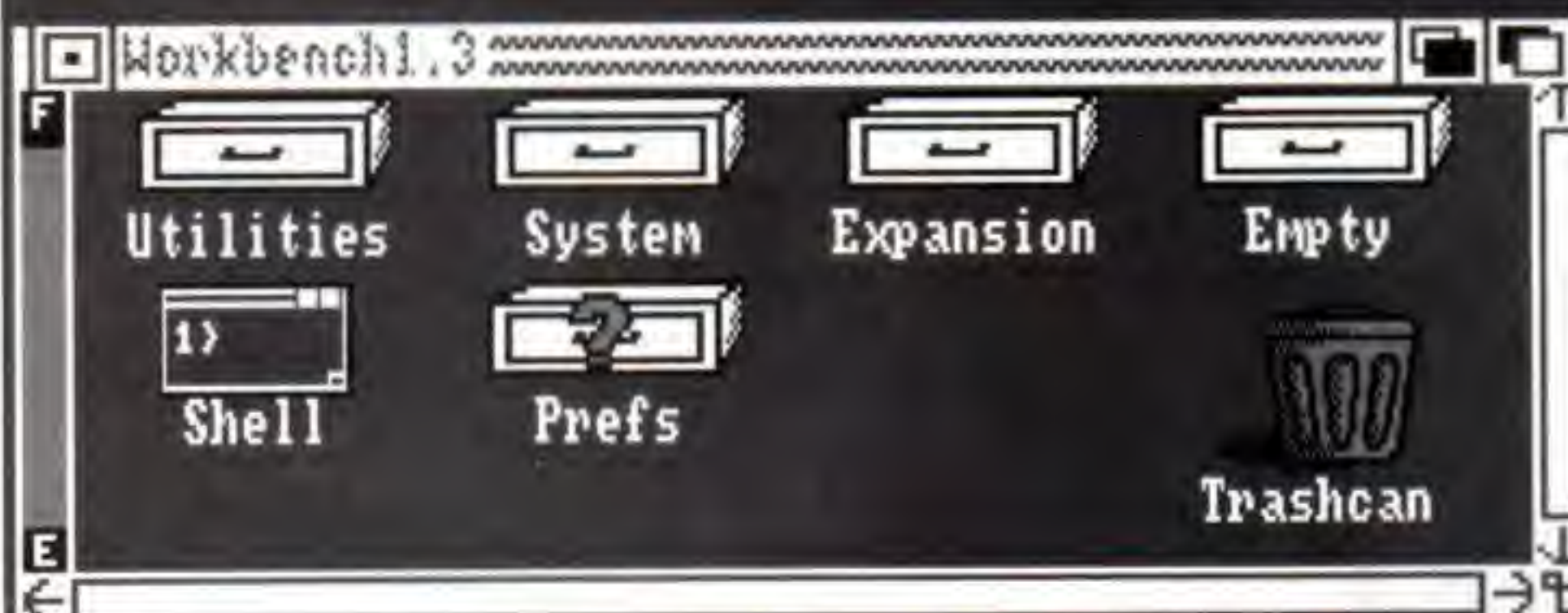
will be able to use it on your computer. This is what happened when version 1.2 of the Workbench was replaced by version 1.3 several years ago. All the 1.2 users could nip out to their local computer shops and buy version 1.3 complete with a new manual, for less than the price of a new game. They then had a whole new upgrade to their machine in its operating system. If Workbench had been stored permanently in the Amiga, this would have been impossible, or at least, very expensive.

**JOHN KENNEDY STARTS YOU OFF IN THE RIGHT WAY**

Everyone should be using version 1.3 of the Workbench by now, as several bugs in 1.2 have been fixed. The manual which comes with 1.3 (entitled the Guide to Enhancer Software) may be daunting to the new user, but forms a useful reference work, so don't throw it away.

Special note for A3000 owners: You are lucky enough to have Workbench version 2. There many special features which are available only from version 2, although most of what is detailed here should still make sense.





*Note: please don't confuse Workbench with Kickstart. Kickstart is always built into every Amiga 500, 1500 and 2000, and the version number appears whenever the machine is switched on without a disk in the drive. All machines bought recently will be Kickstart 1.3.*

To load Workbench, as you probably know by now, you must place the Workbench disk into the drive when the normal 'hand-holding-a-disk' picture appears. After a few seconds of activity (which seem to stretch to years the more you do it) the screen will clear to a pleasant blue colour with two small squares on the top left of the picture. (figure 1) This is the standard Workbench, and although it mightn't look it, it is covered in tools.

First things first. The small squares on the left are 'icons', and they are a pictorial representation of the floppy disks available to the system. "Hold on!" you may say, "I only put one floppy disk into machine, and yet there are two disk icons!". Well spotted. The icon labelled 'ram' is not actually a floppy disk at all, but a 'ram disk' - a piece of computer memory which is behaving as though it were a disk. The main advantage of a ram disk is its speed: There are no moving parts, so data can be stored and retrieved very quickly. The main disadvantage is that whenever you switch off the Amiga, the contents of the ram disk are lost. It's all swings and roundabouts, isn't it?

We can look at the contents of the floppy disk (or the ram disk) by double-clicking on the relevant icon with the mouse pointer. If you double-click (quickly press the left button twice) when the pointer is over the icon, it will change colour and a new 'window' will appear on the screen. Inside this window will appear a new collection of icons, representing the programs that are on the disk. (figure 1) Several of the icons look like drawers (not the type which are white and frilly but the type like a small box with a handle). Inside these drawers are more programs which you can examine by opening them in the same way you opened the disk: Point and click. Try opening the drawer marked 'utilities', by double-clicking on it (figure 3).

***"The main disadvantage is that whenever you switch off the Amiga, the contents of the ram disk are lost. It's all swings and roundabouts, isn't it?"***

You can 'drag' the icons to new locations by clicking on them once, and then moving the mouse WHILE STILL HOLDING DOWN THE LEFT MOUSE BUTTON. The icon can be placed elsewhere in the window, or even moved

outside it. This is how programs and files can be copied from one place to another: just drag them to where you want them to be.

If an icon isn't a drawer, it must be something else, mustn't it? Look at the contents of the Utilities drawer. See the icon called clock? It's not a drawer, it's a Tool and it does something useful: It tells you the time. Well, it will tell you the time, but the time might not be correct. If you had fitted a ram expansion with a real-time clock module there is a good chance that the time is correct. If it isn't, we can fix it later. If you haven't got a ram expansion with a clock - or have a ram expansion that doesn't actually have a clock - the Amiga will always make a guess at the right time, and nearly always get it wrong.

But we're getting away from the point. The clock icon is a tool, and to use it you just double-click on it. Try it. Hey Presto! A clock appears. Because the Amiga is a state-of-the-art multitasking machine, you can leave the clock to tick away and still get on with something else. If you want to move it around the screen you can do so by using the DRAG BAR (figure 4). Position the pointer over the drag bar and hold down the left mouse button. Now you can position the clock to wherever you want. If you want to change its size, use the RESIZING GADGET in exactly the same way: Hold down the mouse button whilst the pointer is above the gadget and move the mouse.

In case you were wondering, 'gadget'



## HINTS

Some people have great problems mastering the 'click' and the 'double-click'. It's not difficult to do, it just takes a delicate touch. Try not to tap the mouse button, rather press it lightly but firmly. If have been brought up using mechanical type-writers you may still be in the habit of pressing down rather hard. There is no need to do this on either the Amiga's keys or the buttons on the mouse. The noise will only annoy anyone sitting nearby (or the neighbours, if you do it hard enough!)

isn't just a term I have invented. A gadget is a small switch which you activate by clicking on with the mouse pointer. Most windows will have some gadgets in their outlines, so you can control their size and position.

The gadgets on the top right of the clock's window are the DEPTH GADGETS. When the clock's window is in front of another window, and so obscuring whatever is underneath, click on the left-hand gadget to move the clock's window to the back. Likewise, when another window is obscuring the clock's window,

click on the right-hand gadget to bring to the window to the front.

However, let's switch the clock off for the moment. Closing down a tool such as the clock is normally done by clicking on the CLOSE GADGET. The close gadget is at the top left and looks like a little square with a dot in it. Once you have clicked on it (no need to double-click), the clock will disappear.

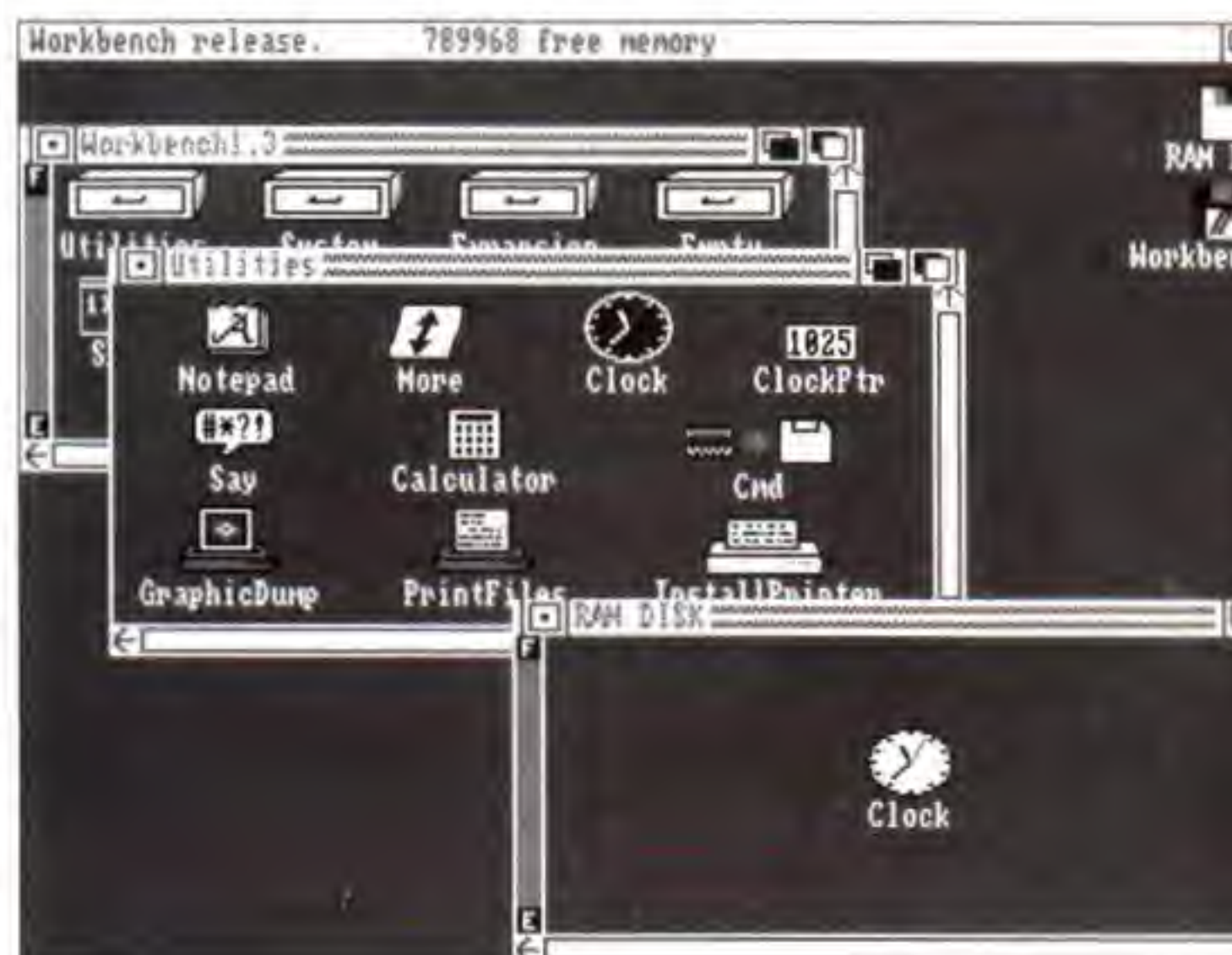
***"Because the Amiga is a state-of-the-art multitasking machine, you can leave the clock to tick away and still get on with something else."***

Let's try copying the clock tool. First open the ram disk icon (double-click, remember) and make sure the clock icon is on the screen somewhere too. (Not the clock inside it's window, just the icon from the Utilities drawer). Now select the clock icon by clicking once on it, and not letting go of the button. Drag the icon into the ram disk's window by moving the mouse, and then let go of the button. The mouse pointer will change to a little Zzzz cloud to let you know something is happening. When it returns to an arrow shape there should now be TWO clock icons: one in the Workbench disk window, and one in the ram disk window. (figure 5) We have copied a file! For your further entertainment, try double-clicking on the clock icon from the ram disk window. The clock face should pop-up quite quickly because this time the data for the program has not been loaded from disk.

## Trouble Shooting

**Q.** I just can't get the Workbench to load. Everytime I put the disk into the drive, the picture of a hand holding a disk re-appears. What am I doing wrong?

**A.** Check that the disk you are inserting at the hand-holding-a-disk screen is in fact the disk marked Workbench, and not the one marked Extras. If you still have no success, the disk you are trying to use must have become corrupted, and you will need a new one. You should always make a copy of your Workbench disk, and work from the copy alone. If you don't know how to copy a disk, wait until next month and you'll find out.





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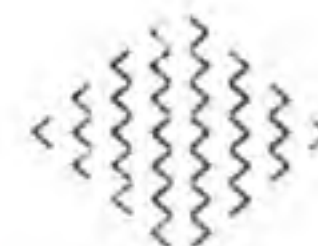
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# All about ICPUG

## FIELD REPORT

forget that no-one is paid for the work which they do!

Benefits of membership include access to the free software library, technical assistance, and discounts on hardware and software.

### 100 PAGE JOURNAL

The ICPUG Journal, edited by Tim Arnot, is published six times a year, and has in the region of 100 pages per issue. It is widely regarded as the most authoritative journal on Commodore machines in the world, providing extensive coverage on the full range of computers including the Amiga, C64 and PC, not forgetting the earlier C128, C16, Plus4, and VIC20 and, of course, the PET.

It is written by volunteers and no payment is made for articles published — the honour is sufficient — and the standard is indeed high. There are no games reviews — these are well-covered by the popular magazines. However the Journal does contain reviews of hardware and software, news of the latest developments and applications and many invaluable hints and tips on problem-solving. There is a regular contribution from our correspondent in Texas who keeps members up to date with news from the States. Her article is E-mailed shortly before the Journal goes to print to ensure that the very latest news is included.

### FREE PUBLIC DOMAIN SOFTWARE

One of the most popular features of ICPUG is the FREE SOFTWARE LIBRARY. Not only does this include over 700 Public Domain disks for the Amiga, but there are also public domain disks or tapes available for all other Commodore computers, even the VIC20 and the PET700.

As well as over 700 Public Domain disks for the Amiga, the other machines are well-covered. The C64 library has around 80 disks crammed with everything from Education,

**U**CPUG is the Independent Commodore Products Users Group. It was formed in 1978 with the title of IPUG (Independent PET Users Group) when one Norman Fox of Hertfordshire had a letter published in Electronics Today International (ETI) asking if anyone who owned or used PET computers was interested in forming a group totally independent of Commodore Business Machines. The object was to share their knowledge of the machines and to further the production of the appropriate software. (By the way PET stands for Personal Electronic Transactor — not a cute furry bug! And it was the first desktop personal computer — well before the IBM PC!).

In March 1982 it was decided to change the name of the group to ICPUG in recognition of the fact that the PET was not the only Commodore computer around. As well as the 22 column VIC there was a rumour of a 40 column VIC, which was replaced by news of a machine called the Commodore 64. With the coming of the C64, ICPUG blossomed and groups were formed all over the country. The membership of the National group topped the 4000 mark.

**13 years ago there were very few home computer users. But ICPUG was already an influence. Janet Bickerstaff explains why it still is . . .**

A further change took place in 1986 when it was decided to form the Group into a co-operative and it is registered as such with the Registrar of Friendly Societies. The Chairman is my husband, John Bickerstaff, who is also Chairman of the ICPUG South East Group.

ICPUG is now in its thirteenth year and is the largest Commodore computer users group in the country. Other groups have come and gone but ICPUG goes from strength to strength thanks to a valiant band of volunteers who give generously of their time and energy. Unlike some other groups, which are really commercial marketing operations, ICPUG is a genuine association of computer users working together for mutual benefit and it is co-ordinated by a voluntary national committee. Because the end result is so professional, members sometimes



Jim Butterfield addresses ICPUG South East.



ICPUG stand at 16 Bit Computer Fair.



Games and Graphics to nineteen disks of Utilities. In addition there are nine Ham Radio disks available in the C64 library. The PC library is available in 360k, 720k and 1.2mb formats.

## REGIONAL GROUPS

Another feature of ICPUG is the regional groups. These are autonomous and vary from a group of friends meeting regularly in someone's home, to a larger group such as the ICPUG South East and the ICPUG South West groups, where many people attend the regular sessions.

ICPUG South East is the Group which I help to run and it was formed in July 1980. We meet regularly at Biggin Hill Library in Kent on every Thursday evening except the first Thursday of the month. One night a month is a lecture evening when we have a guest speaker or a special presentation. The other nights are Open Nights when members are encouraged to bring their own machines and help is available for beginners or those with problems. The one thing that you will not see at an ICPUG South East meeting is professional copiers — software piracy is totally banned. We have a special copying program written by one of our programmers which will only permit the copying of public domain software!

Recent guest speakers at ICPUG South East have included Nigel Jones and Sharon Rodrigo from Commodore's Developers' Support team, and Phil South who gave us a music demonstration using MIDI and his Korg synthesiser. Another lively group meets at Watford, and they too have recently had a visit from the Commodore team. Other groups near London are Mid-Thames and Stevenage clubs, whilst amongst the northern ones are the Macclesfield club and the Amiga group at Buxton — both run by Peter Richardson.

## WEEKEND CONFERENCES

Following a holiday with Peter Miles at the Queen's Armes Hotel in Charmouth in 1987,



ICPUG stand at Commodore Show.



President, Mick Ryan, cuts cake at ICPUG South East 10th Birthday Party.

John and I decided that it was an ideal place for a weekend of Computers and Gourmet Food for ICPUG South East. The first event took place that October, and was repeated the following April. We are now planning our fifth weekend there for ICPUG South East - sorry it is fully booked!

It was after one of our visits that the ICPUG South West Group was formed and now meets at the hotel on the second Sunday of the month. Peter Miles is an Amiga registered developer as well as being ICPUG's Amiga Public Domain Software organiser (and running a hotel!). He ran an ICPUG "Con-Dev" (rather than Dev-Con) at the hotel last October when Commodore's technical team met with ICPUG registered developers (including some famous faces from the industry) to discuss the Amiga 3000, amongst other things.

## TECHNICAL HELP

The technical help aspect of ICPUG is handled in three ways. Firstly written questions are sent to Bavin Clarke (with s.a.e. etc.) and he acts as Technical Co-Ordinator, passing the letters on to various experts on our database who have volunteered to assist with problems. Another way of getting technical help is by telephoning our Technical Advisor one evening. Best of all is to join a local group. At a recent meeting of ICPUG South East a dead PC was completely dismantled and the dust blown out, all the chips and boards reseated, and it was repaired, while at the same time another team were re-aligning the disk drive on an Amiga 500!

## DISCOUNTS

There are discounts available to members for both hardware and software and my husband gets many phone calls requesting advice on best buys and compatibility. As another registered Commodore developer he is also able to advise on software for the Amiga 3000.

## COMMUNICATIONS

ICPUG has its own areas on PRESTEL and COMPUNET and these can be accessed by anyone who subscribes to these services and has a modem and suitable software. Parts of the ICPUG areas are open to all, but only ICPUG members can enter the ICPUG closed user group areas. ICPUG has its own area on the CIX (Compulink Information Exchange) bulletin board which covers all Commodore machines, and has areas on several other BBs, many of which are run by ICPUG members.

## FUTURE

ICPUG are watching with anticipation and excitement as Commodore enters a new era with the CDTV. Some members have already seen it in action when Commodore has visited regional groups and the prospects are mind-bending. Just imagine 550MB of information on a CD disk instead of 1-1.5MB on a floppy! The CDTV can play music on its own, or music with graphics and also run interactive software programs. CD ROM drives are available now and were shown at the recent BETT show at the Barbican in London. A Commodore PC40III had been fitted with a CD ROM drive and was displaying educational software. The possibilities are great for the future and ICPUG will be there.

For ICPUG membership details please contact Jack A. Cohen, Membership Secretary, ICPUG, PO Box 1309, London N3 2UT. Telephone 081-346 0050 after 6 pm. For details of the ICPUG South East Group please contact John Bickerstaff, 45 Brookscroft, Linton Glade, Croydon, CR0 9NA. Telephone 081-651 5436 after 8.30 pm.





# Laser Printers

## Part 1

**In the start of this informative series, Martin Witton explores the history of lasers and the story behind how the laser printer works**

**N**ot so very long ago, Laser printers were considered out of the question for most users, because of their size and cost. The small number of firms who invested in the earliest models were those which had specialist needs or roles on a network, or where desk top publishing justified the expense.

In a relatively short space of time, laser printers can now be found for personal use or at the top end of the market, fast, flexible machines which can meet the needs of an entire office on a local area network. The advantages of a quiet, compact printer which can meet the needs of any user, deserve closer scrutiny. So What Is A Laser?

The term laser is an abbreviation for "Light amplification by stimulated emission of radiation".

Unlike the sun, conventional bulbs or candles, which spread their light in all directions, the laser is spatially coherent light that travels exclusively in a single direction.

It all started in 1960 when an American called Theodore Maiman, following up on the work of Charles Townsend, demonstrated a laser with 'harnessed'

light. This first laser device consisted of a ten centimetre long cylindrical ruby as the core, around which a flash bulb was wrapped in a spiral. This unusual bulb emitted a particularly bright light, like a flash of lightning, into the ruby rod for only a tiny fraction of a thousandth of a second. Fractions of a second later, a red high-energy light beam shot out from the ruby rod - the first 'laser' light. The energy of this first 'laser gun' was very low so the discovery attracted little attention.

Further development based on other beam generating media such as rare gases, crystals, semiconductors and various chemical substances, very soon resulted in tremendous improvements in performance and most importantly, the achievement of continuous operation.

### **Procedures and areas of application**

Laser beams are today used in an increasing number of applications. Examples can be found in manufacturing industry, medicine, measurement technology and research and development, as well as in entertainment electronics,

(compact discs) and in communications technology. The width of the light beam used in each case depends on the application; from the high power needed to melt a diamond, where the generated heat reaches several million degrees, to the low energy required for scanning a video disc.

CO<sub>2</sub> lasers are used where powerful applications are required, for instance, in processing materials such as in metal stone cutting for welding, drilling, and surface preparation. The CO<sub>2</sub> laser is also increasingly used in the technology of medicine.

Excimer lasers with rare gas and halogen mixtures find employment in chemistry, medicine, microelectronics and micro-material processing. As the beam of the excimer laser does not generate any heat in the area of application, it is well suited to cutting sensitive materials. This type of laser is also used for taking accurate measurements. Our distance from the Moon has been measured accurately to within 50cm and this equipment proved equally valuable in measuring the ozone layer.

Solid state lasers are ideally suited for precise and fine detail work where





**“As it passes the drum, particles of toner are transferred from the drum to the surface of the paper.”**

power is of less importance. They are used for spot welding with accuracy down to a millimetre, or for engraving on dies.

Ionic lasers are mainly used in research and development, and in medical technology.

He-Ne lasers (Helium-neon lasers) with highly visible beams are used for light shows at fairs or in discotheques. Other uses for these lasers, with invisible beams, are scanner checkouts in supermarkets where product codes (also called bar or line codes) of packaged goods are scanned and recorded. This technology is also widely used in the printing industry.

Laser diodes operate predominately in the less powerful milliwatt range, and are widely used in communications systems. They are mainly used for optical image storage, even on compact discs; for digital storage of text, graphics, speech and music, and for their retrieval and reproduction.

### **How do laser printers work?**

The theory behind the laser printer is that of an electronically controlled invis-

ible beam of light writing letters, numbers and graphics uniformly as 'bit' patterns onto a rotating drum. The materials used on the drum consist of harmless organic compounds. The action of 'writing' with a laser on the previously negatively charged, highly resistive surface of the drum is to allow the negative charge, at the point the laser hits the drum, to escape to ground. As the drum surface passes the developer surface, the negatively charged developer allows toner to move to the areas on the drum that have been 'written' on by the laser and hence lost their negative charge.

As the printing continues, the pattern is positively charged and as it passes the drum, particles of toner are transferred from the drum to the surface of the paper. They are melted and bonded firmly to the surface as it passes between a press and heat roller.

In this way, individual characters or shapes are transferred with astounding speed and precision first to the drum as electrostatic images, and then to the paper as a high quality printed impression.

To create a printed line, the individual characters are separated into a high-resolution grid. The standard resolution

***Individual characters or shapes are transferred with astounding speed***

of modern laser printers - the number of pixels forming a printing grid - is 300 x 300 pixels per square inch. This is about 120 pixels per centimetre. One square centimetre is made up of around 14,400 pixels, which are either discharged onto the drum to create the image to be printed or left in their original negative state. To compose one A4 page, approximately 8 million pixels must be built up on the drum prior to printing out.

The laser beams are deflected horizontally from a polygonal (multi-surface) mirror onto the corresponding predetermined spot on the drum. As the mirror is divided into separate surfaces, so the laser beam is split. The mirror rotates at up to 7,600 revolutions per minute. In this way, 80 million pulses per minute can be guided onto the drum. When printing is finished, the drum is purged by a strong light and the remaining toner is removed.

**In Part II AUI delves deeper into the operation of laser printers.**



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**Q.** What is a modem?

**A.** A modem is a piece of computer hardware which is connected between the Amiga and a standard telephone wall socket. It permits the Amiga to transmit and receive information using the telephone network.

**Q.** How does it work?

**A.** The Modem converts the serial electronic signals which the computer understands into audio tones which can be transmitted down the telephone lines. The name comes from a contraction of the term MODulator/DEModulator, because the modem modulates (changes or alters) a simple fixed tone (the carrier).

**Q.** What can Modems be used for?

**A.** Lots of things. How does playing Populus with someone in Canada grab you? Or getting Public Domain software for free, even before a library gets it?

**Q.** Not bad, but that's not all they are used for surely?

**A.** You're quite right. Most of the time they are used to connect computers to Bulletin Board Systems (BBSs).

**Q.** What is a BBS?

**A.** A BBS is an electronic message board, running on a computer system (called the host system) and connected to the telephone service via another modem. Most BBSs are run by home users as a hobby, although commercial systems do exist. All boards have mailing systems to enable you to chat to other computer users. Most also have large databases of public domain software which you can download for free.

**Q.** Aren't Bulletin Board's expensive to use?

**A.** Not necessarily. Nearly everyone has a bulletin board (BBS) within their local dialling zone. Most of the BBSs run by hobbyists are free to use and great fun. If you stick to an hour or two a week, and use the cheap rate for your calls, you probably won't notice the extra amount on your phone bill. Commercial systems on the other hand, will charge you so many pence a minute PLUS your normal line charge.

**Q.** Is it legal? Is it safe? Is it hacking?

**A.** If you use a British Telecom approved modem, it is perfectly legal to connect and use your Amiga in this way. As long as you use your common sense neither your Amiga or the country's phone net-



work will be damaged. Hacking is a phrase normally used to describe the illegal access of private or government run computer systems. There are more than enough public access systems to keep you occupied.

**Q.** How much is a modem?

**A.** You can buy a modem second hand for about fifty pounds, although you might end up with one that operated at a very slow speed - such as 300 baud. The faster the better, because the less time you spend waiting for software to download, the smaller your telephone bill. Try and get a modem which operates at least at 2400 baud, preferably 9600 baud. New modems will cost from one hundred pounds upwards.

**Q.** What's all this baud jargon then?

**A.** As with all aspects of computers, comms (communications) has its own collection of jargon. Here is a list:

**BAUD** - bits per second, a measure of the speed of a modem. The higher the better.  
**Carrier** - the tone which is modulated by the modem in order to transmit information.

**MNP** - a form of electronic error correction/compression. Usually accompanied by a level number, for example "my new modem has MNP level five". It is a Good Thing to have.

**RS232** - the standard for serial communications which most (if not all) modems use.

**Terminal** - when you are using your Amiga to communicate to the host system, it is acting as little more than a dumb terminal. Don't feel bad about it. If it upsets you that much, ask as Sysop about SkyPix.

**Sysop** - short for 'system operator', or the poor fool who spends his time and money running a BBS for you to use. Be nice to Sysops: You may get extra privileges on the board.

## How to use... A Modem

**XMODEM/YMODEM/ZMODEM** - All protocols for downloading and uploading programs. You can't download programs like text for several good reasons. These protocols will bundle the software together into packets, and send them one at a time, checking for errors all the while.

**Archiving** - most software is stored on BBSs in a compressed format called an archive. This makes sense because it (a) takes up less space on the host system and therefore leaves room for more and (b) takes less time to download, and therefore saves you money.

**V21** - 300 baud  
**V22** - 1200 baud  
**V22bis** - 2400 baud  
**V23** - 1200 one way, 75 the other.  
Prestel uses this mode.

**Q.** What do I need apart from a Modem to get started?

**A.** Apart from a modem, all you need is a suitable cable to connect it to your Amiga, and some terminal software. Most terminal software is public domain or shareware. Look out for Access!, which is a good package to get started with. Ask your favourite PD Library for a copy.

**Q.** What do I do next?

**A.** Buy (or borrow) a modem. Make sure it has a nice green British Telecom approved sticker on it, or you will be breaking the law. Connect it your Amiga, and connect the lead to the standard telephone wall socket. Run your comms software, pick a BBS and call it up.

**Q.** Know any good BBSs to try?

**A.** Of course. Above is a short list.

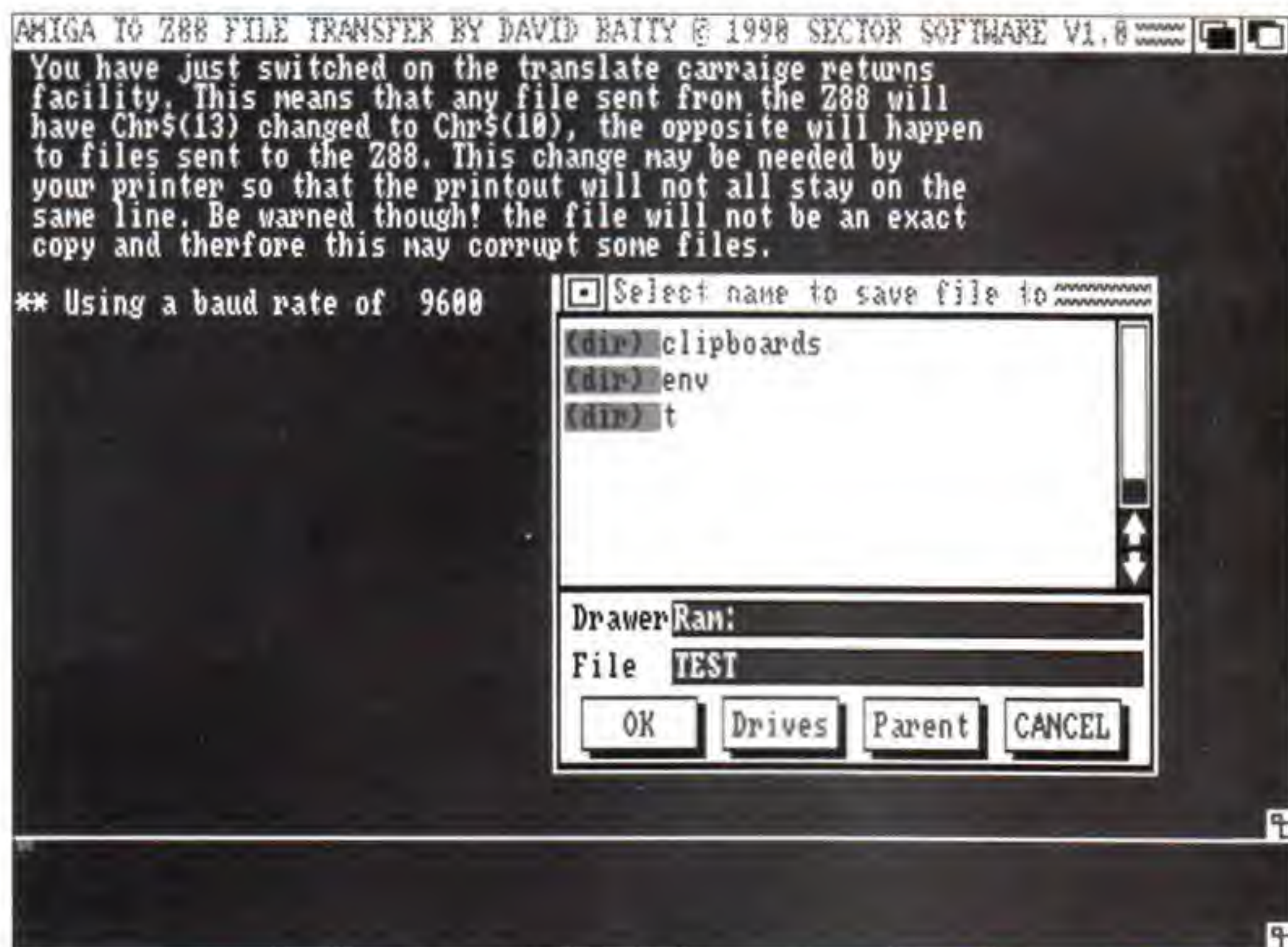
BBS Board	Times Online	Phone Number
Alliance BBS	7.00pm - 7.00am	061-339 0337
Amiga Connection	7.00pm - 7.00am	081-503 0593
YUKONHO	24hrs	0232-768163
CIX	24hrs	081-399 5252
Treasure Island	24hrs	0992-447273



# TEST DRIVE

## Z88 Link

John Kennedy links his Amiga Z88 ...  
or is that the other way round ...



*With a standard RS232 connector and built-in terminal software, transferring data to and from other computers is not a major problem.*

**Y**ou may not be aware of the fact, but there is a portable Amiga. It's been available for several years now, and lots of people have one. They are black A4 sized, have a large mono LCD screen and cost about two hundred pounds. Why haven't you heard about them? Well, you musn't have been listening. What are they called? The Amiga A4000? A5000? No - they're called the Cambridge Computer Z88.

Think about it. If there were a portable Amiga (as produced by Commodore, anyway) who would use it? A sizable percentage of potential users would be looking for nothing more than an easy way to enter and store text. Journalists, for example. Students. Businesspersons. OK, so it would be nice to while away the train journey playing Powermonger, but the essential item is only to enter and store text reliably. Being able to play games on a portable machine with a colour display and 3.5 inch disk drive would be too expensive to contemplate. This is where the Z88 fits in. If you haven't seen one, you are missing out. There are small, light and very, very portable. Not only are they good little Word Processors, but they are fully functional Z80-based computers, with built-in BASIC, diary, alarm clock, spreadsheet and database software.

You can plug over a megabyte of ram into them, and they can last 20 hours on a set of four HP7 batteries. A potential minus is the inclusion of a typically Sir Clive Sinclair rubber keyboard, but if the E key on this one was a bit more sensitive I could live with it happily. The joyous news is that they also have an industry standard RS232 connector. Joyous, for it means that you can connect the Z88 to just about anything. Even an Amiga. In theory at least, all you need is a standard Comms

program to capture the text as it's squirted over. The only drawbacks to this method is that it is a bit fiddly and won't take full advantage of some Z88 features. A far better approach is to use a custom written piece of software, such as Z88/Amiga Link from Sector Software of Lancashire. This package comes complete with the correct cable to connect to the Z88 and Amiga serial ports, plus a disk with an Amiga program on it. To use it, you boot from the Amiga disk (or install the contents onto your hard drive) and then start sending the data from the Z88's own Import/Export control panel.

If something goes wrong, it's only a matter of trying again until you get it right. I had some minor disagreements with an Amiga in the office renowned for being 'odd', but no problems with any other machine I tried. In fact, when I tried the 'odd' Amiga the next day, it worked perfectly. I could only put it down to poor air quality. At the time, the software was witty enough to remark "You have not been charged for this call". Although the Amiga program is relatively simple (and written in HiSoft BASIC) it does the job. So what more could you want? If you need to compute on the move, don't even consider some horribly over-priced and over-weight PC compatible. The Cambridge Computer's Z88 is the ideal match for the Amiga: they're both ahead of their time.

**"The software was witty enough to remark 'You have not been charged for this call'"**

**Product: Z88/Amiga Link (inc.cable)**

**Price: £25**

**Contact: Sector Software,  
Unit 13, Centurian Way Industrial Estate, Farington Leyland, Lancashire, PR5 2GU**



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## Amiga 500 1.5Mb RAM Expansion Board

**Why have a 1 Meg Amiga when for a little extra cost it can be 2 Meg? Pat Kelly finds installing a 1.5Mb Expansion RAM Board into his A500 is as easy as one, two, three...**

**W**ho will buy my 0.5Mb expansion board with battery backed up clock", came the attempt around the offices after I fitted this 1.5Mb expansion board. The statement was so long that it started as out in an "Oliver" musical theme and ended in a Town-crier oyez, oyez!

As you may have guessed I was a might happy as I had planned to give myself half an hour to complete the project - opening up the A500 is always fraught with hidden problems. In practice, it took me 15 minutes to open the A500, fit the 1.5Mb expansion, and reassemble the Amiga - and during that time I had to find a screwdriver!

**The Gary chip is placed on the IC holder board.**

It wasn't all that long ago that 0.5Mb was proclaimed as the maximum amount of expansion memory that could be added to the A500 via the bottom expansion slot (the trapdoor). Things are moving fast in the Amiga world and it is now possible to add 1.5 Megabytes with a simple internal modification and Kickstart V1.3.

The A500 1.5Mb RAM expansion board looks similar to a half Megabyte board except that it has an additional 2-core cable link to a connected IC socket, mounted on a glass-fibre board, on which the Amiga's GARY custom chip is mounted during installation. There is an in-built battery backed-up clock and an enable/disable switch. The required chips

are of 128k capacity, and the board has three 512k banks - each containing 4 of these chips. The board can be purchased bare (with no expansion RAM) and up to three 512k banks added when required.

The A500 cover can be prised off after the six retaining screws are removed (this will invalidate the Amiga's 1 year manufacturer's warranty, so is a no-no for new owners - unless they wish to take the risk). In some Amigas the screws are the awkward Torx standard, but a small flatbed screwdriver will facilitate the removal and re-fitting of these pentagonal screwheads. After the Amiga is opened up the keyboard is detached from its mounts and its connector removed. The A5 four-page fitting manual not only gives complete Amiga disassembly and fitting instructions, but also reminds the DIY fitter of the correct orientation of the connector.

The main expansion PCB is plugged into the expansion slot leaving the IC socket to be connected to the Gary chip. This connection involves the removal of the GARY - this should be attempted by carefully prising the chip from side-to-side until it eventually works itself loose. The Gary chip is placed on the IC holder board. Care is required here, if the instructions are not followed and the Gary chip is fitted the wrong way round - a common fault of conventional chip design - the chip, and possibly the Amiga, will become damaged. The expansion's IC board, complete with Gary newly installed is now plugged into the vacant Gary IC socket on the main Amiga PCB.

The Amiga is assembled as easily as it was to disassemble and left me wondering why it had even taken as long as fifteen minutes to complete this simple operation. Lack of practice, I reckon.

Apart from the fitting of an expansion RAM module the only other consideration that prospective buyers have is the question of compatibility. If the module contains some sort of internal modifications what will this do for compatibility? The answer is that the board does not modify the internal workings of the Amiga, but takes some extra information from it and thus the hardware operations are unaffected. In other words, the RAM is legal and will not substantially effect any application, or game to the extent of causing them to fail to work because of it.

The now 2Mb Amiga A500 will not execute programs which fail to recognise expansion RAM and those utilities which do not run on 1Mb A500s because of memory configuration will not run on this system. The expansion's enable/disable switch is located under the

trapdoor and is within easy access.

I am constantly amazed at what some designers and manufacturers have produced and this is one of those products. Highly recommended.

**Price: £89.95 (fully populated)**  
**Contact: Evesham Micros**  
**Tel: 0386 765500**

### Eight Megabytes And That's Your Lot!

All these different methods of connecting extra memory to the Amiga may lead to some confusion - it is quite possible to add in excess of 10Mb using different combinations of peripherals.

However, the maximum expansion RAM which can be added to the Amiga legally is 8Mb. If any supplier offers more then they are breaking Commodore's address bus protocols, or Commodore have changed their protocols, which they may have to do quite soon for their power Amigas.

For the A500, there are various modules on the market which allow 8Mb to be plugged into the expansion port on the left side of the machine. An extra 2Mb can be added if you link a hard drive onto this memory expansion module. There is an expansion connector underneath the machine from which an extra 1.5Mb can be added. If you have the full 8Mb already then adding extra Megabytes will not improve the memory capability of your machine.

Although your excess memory will come to no harm it will be placed in an address location which the Amiga cannot access and therefore cannot use.

### FACTS

**The 1.5Mb Expansion RAM will only work with Amigas with Kickstart V1.3 or greater**

**The Amiga must be opened up to enable fitting of the board - an action which will invalidate the 1-year manufacturer's warranty**

**The Gary chip must be prised out of its connector and placed on the expansion's link board. The board is then refitted in the Gary slot on the Amiga's main PCB**

**The whole operation should take no longer than 15 minutes to complete, but care must be taken throughout**

**The product comes complete with an A5 4-page leaflet containing instructions and a step-by-step assembly guide.**





The A500's power supply unit (PSU) supplies the Amiga with 60 Watts of power while the Amiga 1500 and Amiga 2000 power supply is rated at some 200 Watts. The difference between the varying specifications is due to the fact that the A500 is a base machine, the costs for it were kept low, and the user of an A500 was not envisaged to expand it past the 0.5Mb memory upgrade and a second disk drive standard. The A500 power supply can supply these upgrades adequately, but if you add a hard drive and 2Mb RAM expansion to the shopping list and, more likely than not, the upgrade will include an additional power supply unit to drive it. For example, take Commodore's official A590 hard drive which is supplied with its own external PSU. The A500's PSU supplies power to the A590 through the expansion interface. However, this supply line has very little power left to feed the drive after the power to drive the A500 and ancillary equipment is deducted. Therefore a second PSU is supplied to deliver the additional necessary power.

An A500 expanded with an 8Mb Cortex RAM Expansion and an A590 hard drive requires three separate power supplies, although all units are connected to internal power lines. The Amiga 1500/2000 can support any expansion unit's extra power requirement because it has a higher power supply rating. If the A500 had a similar power rating as the Amiga 1500/2000 the extra power sup-

# Evesham

## TEST DRIVE

### Replacement Power Supply

The A500's power supply could be hard pushed to supply power to additional expansion units. Pat Kelly plugs his A500 into a replacement PSU...

plies required to drive most ancillary equipment would not be required. Exceptions to this would be hardware such as VIDI which requires an external supply as it is not connected to a suitable interface supplying the power it requires.

It is quiet likely that although a higher power rating PSU is desired, one will only be required when the original becomes faulty. Some Amiga users will experience PSU difficulties without actually realising it. A personal experience that I encountered was that my A500 was not outputting audio correctly. After swapping the Amiga, the monitor, and the leads with working components the failure was traced, surprisingly, to a faulty delivered with a new PSU. One of AUT's readers had a brand new A500 delivered with a new PSU. Up came the famous pointing hand but nothing else. The supplier assumed the A500 to be faulty and it, though not the PSU, was replaced. Same result! The reader and supplier began to assume a faulty batch of A500s. After much scratching of heads the PSU was found to

be faulty. What had fooled both supplier and reader was that there was just enough power to start the machine, but not enough to run it!

The Replacement PSU from Evesham Micros is rated at an increased, but not mammoth, 96 Watts. The A500 Replacement PSU has no real cosmetic difference over the official A500 PSU and the only variation is in the useful extra 36 Watts of power it supplies – which will obviously offer more power to any expansion that you may have. However, it will not drive an A500 with heavy power consuming expansions, but it will drive more than the original Commodore PSU. It is certainly a well-constructed and neat-looking piece of equipment and if you have any doubts about your own PSU is a very good replacement.

Price £39.99

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Tel: 0386 765500

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# TEST DRIVE



Who in their right mind would buy a £300 digital stereo system, and channel it through a tinny mono speaker? Well, thousands of Amiga owners have done just that. One solution to the problem is to hook your machine up to a hi-fi, if you have one nearby your computer set-up. The other solution is to get hold of an amp and a couple of speakers, such as Zydec's Zy-Fi system for example.



As you would expect, there are no complaints in the treble department. High hats and snares are reproduced with all the crisp clarity of the original samples. The Zy-Fi's rivals tend to lack a decent punch when it comes to pumping out bass sounds. However, even at fairly high volume levels, the Zy-Fi doesn't allow the treble to drown the mid and bass. While other systems distort with the volume turned up to a worthwhile level, Zydec's speakers stand their ground.

Although it can't hope to rival the sound quality and "oomph" value of a proper hi-fi system, the Zy-Fi is the next best thing, and a good deal cheaper! Whether you are into Amiga music, demos, or just want to get more from your games, the Zy-Fi amp comes very highly recommended. T.H.

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For your money, you get a couple of speakers of unspecified wattage, measuring 24 x 12 x 9 cm. An external power supply is included. If you are short on mains terminals, you can switch to battery power. A single volume knob controls both speakers.

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# MED V.3

**W**ith the prices of RAM expansions and samplers continually falling, there's never been a better time to get into the musical side of the Amiga. Even if you don't know your Arsenal from your elbow when it comes to music, with a bit of imagination you can still come up with some worthwhile sounds. MED (Music Editor), is virtually free, and is an ideal starting block for anyone interested in computer music.

MED began as a fairly simple clone of Soundtracker, the standard PD music tool used by Amiga programmers worldwide. In line with Soundtracker, MED allows the sequencing of four channels of samples. MED's superior file handling and multi-tasking abilities make it favourite from the start. Anything created with Soundtracker or Noisetacker can be loaded in for modification, so compatibility is no problem. MED also acts as a 16 track midi sequencer, which can control a midi device and play samples through the Amiga simultaneously.

The comprehensive volume controls allow you to adjust the volumes of each sample, and each of the 16 tracks independently. The Amiga keyboard is used to play and record separate pieces, but if you have a midi keyboard, you can use that instead, even if you're only using Amiga samples for the music itself.

So what's new in the latest version? A fair bit, actually. There is a built-in sampler (you will need a sampler cartridge for this, of course), which is very handy, as it avoids you having to switch from one program to the other if you fancy grabbing a new sample. It also makes looping the samples a lot easier, which can now be done by highlighting a section of the pixelised waveform. Whilst in the sample editor section, you can reverse the sound, tweak the volume and add variable degrees of echo.

Despite what the experts will tell you, you don't have to lay out big money for a worthwhile MIDI setup, says Tony Horgan - and finds a PD program that proves it!

*Chords can now be recorded in real-time, consisting of up to 16 notes if you are using midi.*

You can now use synthesised sounds created by the computer. Creating them yourself can be a bit of a headache, but there are some including on the disk which can be modified to suit your needs. You are unlikely to come up with any sounds to rival even the most basic synth, but they do have the advantage of using far less memory than samples.

Chords can now be recorded in real-time, consisting of up to 16 notes if you are using midi. The midi side has a few new features too, including the ability to record note velocities from touch-sensitive keyboards, and sustain lengths can also be automatically recorded if you like.

Other aspects that were previously rather awkward have now been tidied up. No more mind-bending maths is involved in creating volume and pitch slides. It is now just a matter of "point and click", and the computer makes all the calculations for you. The file-handler has been updated, but ex-Soundtracker users will be pleased to see that there's still the option to use preset lists.

## TEST DRIVE



Songs can be saved out and easily replayed through CLI, Workbench, or included in your own programs.

You would be lucky to get all of these features, with this degree of user-friendliness in a commercial package. With "professional" music software selling for three-figure sums, MED V3 is absolutely amazing value for money. So, despite what the "experts" will tell you, you don't have to lay out big money for a worthwhile midi set-up. A sampler isn't vital, as there are plenty of sample disks available from PD libraries. Even if you are only vaguely interested in the world of samplers and synths, you can't go wrong. Get a copy ASAP.

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# AUI SPELL

## USER PORT

**D**uring last month's code you no doubt saw the references to routines such as `CreateStack()`, `PushStack()` and so on. But there were no such stack routines present in the listing! Why not? It's because I used an existing already compiled module to provide the stack handling facilities. This month, I thought it would be worth spending some time explaining how this is done.

Firstly, however, a few words about 'abstraction' are in order. Abstraction refers to the process which allows details to be discarded in order that the main features of interest can be considered. We continually abstract in everyday conversation and, notwithstanding the relatively manageable obstacle of 'specialist jargon', the result of using well-defined terms to represent complex operations is usually a simplification of the overall communication process. In other words, it may sound awkward but it leaves no room for confusion — or should do.

In the computing world, subprogram units, such as C's functions, are abstractions of a different kind. Here, complex operations can be described and used by simply using a name and a few parameters. The result — we can create effective building blocks for solving problems.

These ideas work for data items as well and, in fact, data types such as floating point numbers provide us with similar 'abstraction orientated' benefits. At machine-code level, floating point numbers are just a collection of bytes grouped together but C's floating point number data type allows such numbers to be added, subtracted, multiplied and so forth without having to worry about the internal representations.

As we start working with more complex data items, especially things like lists and trees, then most high-level languages offer less help. In fact if you want to use such data structures you have either to write or obtain some suitable routine and both of these paths invariably lead you into the world of the Abstract Data Type or ADT.

The ADT approach is simple and it is based upon carefully defining the important properties of the abstract data structure and identifying the allowable operations. The result - a rigorous ADT definition which, together with a well-defined interface definition becomes a 'data structure' building block to be used in

Paul Overaa takes a look at the ADT library package used by **AUI-SPELL's** tree searching code...



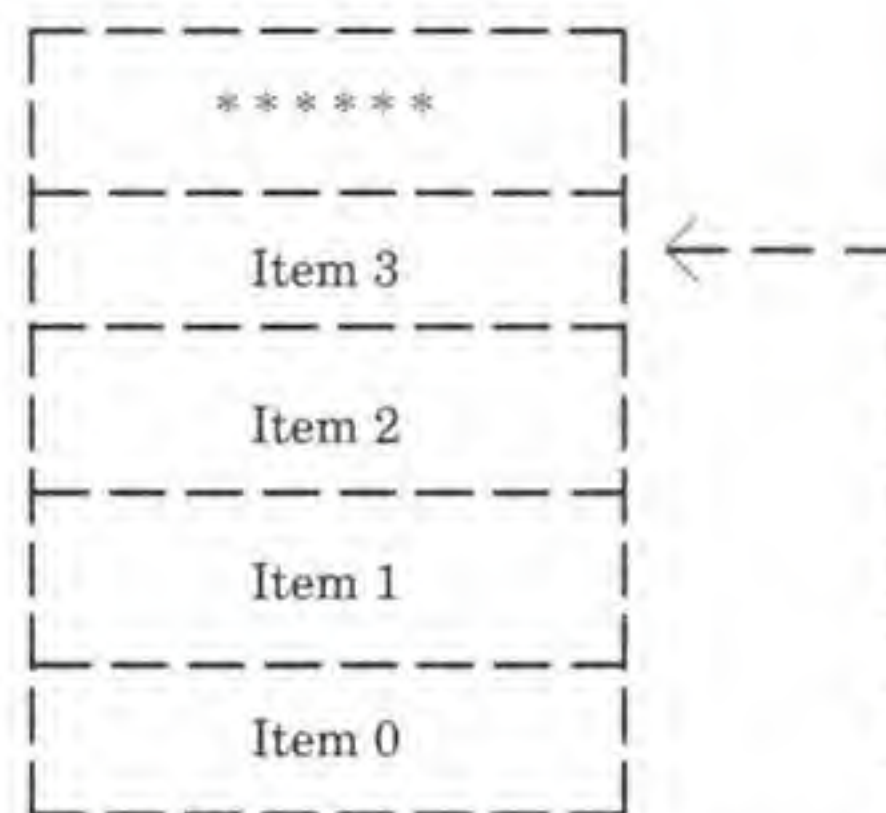
the same way that inherent data types, such as integers and floating point numbers, are used.

The data type used within last month's **AUI-SPELL** tree searching code was a fairly simple ADT - the stack. A stack is a group of objects logically arranged in a Last-In-First-Out (LIFO) order.

The type of stack operations needed was also pretty straightforward... we had to be able to add and remove items from a stack and be able to kill (ie remove) any stacks created. It was also seemed advisable to be able to test a stack to see if it is empty!

As far as implementation itself goes there were several options: One way of implementing a stack is to use an array in conjunction with a 'stack pointer' variable...

ARRAY SPACE  
for five items



stack pointer  
variable (sp=3)

This is quite efficient, very easy to implement, and perfectly adequate for many applications. An array and its related stack pointer variable can be linked together using a C structure...

```
#define SIZE 5

struct stack {

    int stack_pointer;
    int items[SIZE];
};
```

which then allows the use of declarations of the type...

```
struct stack s;
```

Slightly more flexible arrangements, using unions, can allow dissimilar objects to be stored on the same stack but this is not a practice to be encouraged unless there is an over-riding reason for creating mixed object stacks. Similarly, the use of pre-processor modifiable, unit types such as...

```
struct stack {
    int stack_pointer;
    STACKTYPE items[SIZE];
};
```

coupled with #define based modifiable STACKTYPE definitions, are frequently suggested as C solutions for generic ADT stack building. These forms of schemes are fine as far as they go, but they are essentially all 'define at compile time' static solutions which can produce a number of problems in practice. As far as array based implementations are concerned stack overflow is, of course, another danger which needs to be considered.

When I wrote my stack ADT code I had a number of specific requirements in mind: it was to be possible to use any number of different stacks handling any number of different object types, have different types of stacks in existence at different times, use the module in any number of programs without having to re-compile it and not be limited to working within a fixed memory space, save that of the limit of the system itself. Last but not least, I wanted a module which could easily be ported to different machines... so ANSI C was the obvious choice here!

I opted for a linked-list dynamic memory allocation approach using `calloc()`/`free()` calls to provide space for the items being stored on the stack. Within the stack module described this month the routines are based on two types of structures which represent firstly the list headers (stack descriptors) and secondly the stack items themselves.

The descriptor structure contains a pointer to the first item on a linked list of stack items and a value representing the size of the objects being placed on the stack...



```

struct StackDescriptor {
    struct StackItem *FirstItem;

    UBYTE ItemSize;
};

```

The stack item structure contains two fields... a 'next item' pointer, and a reference to the first byte of some unspecified data item...

```

struct StackItem {

    struct StackItem *NextItem;

    UBYTE Data[1]; /* actually user de-
    fined amount of data */
};

```

I mentioned the ADT interface routines last

<b>s=CreateStack(t)</b>	This initializes a stack suitable for storing items of type t specified by the applications program and returns a pointer s to the stack's descriptor.
<b>e=PushStack(s,x)</b>	This stores item x on stack s and returns an error flag e that is TRUE if an error has occurred.
<b>e=PopStack(s,x)</b>	This retrieves an item from stack s and places it in variable x. Errors are signified by the returned error flag e being TRUE.
<b>KillStack(s)</b>	This unloads and then deletes the stack s. No return value.
<b>f=StackEmpty(s)</b>	This tests stack s to see if it is empty and returns a flag f as TRUE if there are no items on the stack.

month: Here are the operations which I have chosen to implement...

These calls are actually macros which have been designed to create a friendlier ADT interface to the user. The definitions are held in the header file - this has to be included (using #include) in the applications program which is to use the stack ADT. Once compiled the module itself however provides a transparent unit which can be linked into any program which needs a stack data structure.

Here then are the stack header and code details which allowed me to build those tree searching routines discussed in AUI-SPeLL

part IV...

```

/*
 *
 * Source: Stack ADT header
 *
 */
typedef void STACK;
/* These macros are used to create a slightly more
friendly interface to the user. They just remove the
need for explicit size of(), casting and address taking
operations in the applications code... */
#define CreateStack(t) CreateStk(sizeof(t))
#define PushStack(s,x) PushStk(s,(UBYTE *)&(x))
#define PopStack(s,x) PopStk(s,(UBYTE *)&(x))
#define KillStack(s) KillStk(s)
#define StackEmpty(s) StkEmpty(s)

/* These are the prototypes for the underlying stack
access routines which do the real work... */
STACK *CreateStk(ULONG unit_size);
void KillStk(STACK *descriptor_p);
BOOL PushStk(STACK *descriptor_p, UBYTE
*data_item);
BOOL PopStk(STACK *descriptor_p, UBYTE
*data_item);
BOOL StackEmpty(STACK *descriptor_p);
/*
 *
 * SourceCode: Stack ADT routines
 *
 */
/* Notes: These routines allow a program to use a
true dynamic stack data structure without the
knowing anything about how it's done. */
/*
 *
 * #include <types.h>
 * #include <stack_adt.h>
 *
 */
struct StackItem {
    struct StackItem *NextItem;
    UBYTE Data[1]; /* actually user defined
amount of data */
};

struct StackDescriptor {
    struct StackItem *FirstItem;
    UBYTE ItemSize;
};
/*
 *
 */
STACK *CreateStk(ULONG unit_size)
{
    struct StackDescriptor *stack_descriptor_p;
    if (stack_descriptor_p=(struct StackDescriptor *)
        calloc(1,sizeof(struct StackDescriptor)))
    {
        stack_descriptor_p->ItemSize=unit_size;
    }
    return((STACK *)stack_descriptor_p);
}
/*
 *
 */
void KillStk(STACK *descriptor_p)
{
    UBYTE *dead_block_p; struct StackDescriptor
*stack_descriptor_p;
    stack_descriptor_p=(struct StackDescriptor

```

```

* )descriptor_p;
while (stack_descriptor_p->FirstItem)
{
    dead_block_p=(UBYTE *)
    stack_descriptor_p->FirstItem;
    stack_descriptor_p->FirstItem=stack_descriptor_p-
    >FirstItem->NextItem;
    free(dead_block_p);
}
free(stack_descriptor_p);
}
/*
 *
 */
BOOL PushStk(STACK *descriptor_p, UBYTE
*data_item){BOOL error_flag=TRUE; COUNT i; struct
StackItem *new_item_p;
struct StackDescriptor *stack_descriptor_p;
stack_descriptor_p=(struct StackDescriptor
*)descriptor_p;
if (new_item_p=(struct StackItem *)
    calloc(1, sizeof(struct StackItem
*)+stack_descriptor_p->ItemSize))
{
    new_item_p-
    >NextItem=stack_descriptor_p->FirstItem;
    stack_descriptor_p-
    >FirstItem=new_item_p;
    for (i=0;i<stack_descriptor_p-
    >ItemSize;i++)
    {
        new_item_p->Data[i]=*data_item++;
    }
    error_flag=FALSE;
}
return(error_flag);
}
/*
 *
 */
BOOL PopStk(STACK *descriptor_p, UBYTE
*data_item)
{
    BOOL error_flag=TRUE; COUNT i; UBYTE
*dead_block_p;
struct StackDescriptor *stack_descriptor_p;
stack_descriptor_p=(struct StackDescriptor
*)descriptor_p;
if (stack_descriptor_p->FirstItem)
{
    for (i=0; i<stack_descriptor_p->ItemSize;
i++)
    {
        *data_item++=stack_descriptor_p->FirstItem->Data[i];
    }
    dead_block_p=(UBYTE
*)stack_descriptor_p->FirstItem;
    stack_descriptor_p-
    >FirstItem=stack_descriptor_p->FirstItem->NextItem;
    free(dead_block_p); error_flag=FALSE;
}
return(error_flag);
}
/*
 *
 */
BOOL StkEmpty(STACK *descriptor_p)
{
    BOOL empty_flag=TRUE; struct StackDescriptor
*stack_descriptor_p;
stack_descriptor_p=(struct StackDescriptor
*)descriptor_p;
if (stack_descriptor_p->FirstItem) {empty_flag=FALSE;}
return(empty_flag);
}
/*
 *
 */

```

P.A.O.



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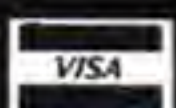
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# AMIGA ANSWERS



Andy Eskelson searches out the answers to your tough technical questions

Dear **AUI**,

I currently own an A500, with an extra half meg of ram fitted in the trapdoor, and external disk drive.

Until now I have used the Amiga exclusively for games, but as I am now 14 I have recently chosen my GCSE option which include, BUSINESS STUDIES, incorporating W.P. data-bases graphics & spread sheets, C.D.T Design communication & technology, and a graphics design ART course.

I would be grateful for your advice on suitable upgrades, software, and peripherals to assist in these studies.

It has been suggested I start by obtaining a STAR LC200 printer, and PEN PAL wordprocessing Software, can you comment?

**L. Woodage,**  
**Essex.**

Dear **L. Woodage**,

The Star printer will be a big help to you, especially if you are going to produce reports and coursework on the Amiga. Another purchase you should think about is a hard disk. This will be very important to you as you progress with your graphics work. Any form of graphics takes up a lot of disk space, and it can be very tedious waiting for things to load and save. Commodore's A590 disk drive is very good and has the added bonus of having sockets inside for up to 2 megs of extra ram.

Software is a little more difficult, Pen Pal is fine as word processing goes, it depends on what you want to achieve. You can judge it from the review in this issue of **AUI**. I have Scribble! for general work, as it is very simple and quick for me to use. I am finding that it has limitations, and I will be purchasing Protex soon. However, that is just a W.P. package, graphics are another question. Do you want to include graphics in your reports? There are several packages that will do that. You should look at Pagesetter

2, this really needs a hard disk to run effectively, but you can produce some very good work with it. Try to find someone who has a mixture of W.P. software and test it yourself. If you are not sure get something CHEAP and start to use it, once you find the limitations that are peculiar to you, you will be able to make a much better decision for your real purchase.

Graphics software is very common for the Amiga; Dpaint, Photon, Photolab etc.. all are good, but get something that will work in HAM mode (Photon is good for this). The new version, Spectracolour, will be out shortly. Do you want to do animation? If so you will need to look at packages that do this.

Another type of graphics is the ray traced system. These produce stunning pictures, but take an age to calculate. An old package is Turbo Silver (the latest version is called 'Imagine'), but there are quite a few others about now.

If you are going to do business studies, what about databases, spreadsheets and the like? Well, there are so many from which to choose that you will make a few mistakes, the trick will be in limiting the mistakes to keep the cost down. Try to get hold of the Home Business pack of software, that has a mixture of software, database, spreadsheet, W.P. D.T.P. etc which will get you going. You can then decide on something better when you gain experience. Try LANs at Chadwell Heath, I did see a couple of packs in there when I last visited them, and it's not too far from Barking.

Dear **AUI**,

Regarding the reply to Gary Byatt's letter in the FEB issue, I think you have missed the point slightly when you answer his query about using the AMIGA + SCART leads to a TV.

A monitor - RGB or COMPOSITE will definitely beat a TV hands down regardless of its screen size or the repute of the manufacturer,

UNLESS you are using certain configurations on your SCART connection.

The SCART Euroconnector leads carry many different signals, including COMPOSITE & ANALOGUE RGB, notably they also carry STEREO sound. The Amiga will produce monitor quality results on most TVs equipped with a SCART, if connected with an AMIGA to ANALOGUE RGB SCART lead. This lead should be readily available and means you can dump that lump called a modulator from the back of your beloved. I myself use an old THOMSON TV (6 yrs old) with superb results, and with its 21" screen my graphics work is made easier and far more impressive than the typical 14" monitor widely used.

I'm not saying BUY A TV NOT A MONITOR - TV's will generally cost more than a good monitor especially 21" up and will not have many useful features associated with monitors, like the ability to size the display with controls at the back.

If you already own a SCART equipped TV, you would be well advised to fork out £10-15 for the lead before you fork out any more for a separate monitor. That is, of course, if you don't mind missing NEIGHBOURS occasionally...

A monitor, basically, is just a TV with no tuner - the circuitry being devoid of any outside interference allows the purest possible signal to reach the screen, resulting in much sharper hues particularly red & blue and apparently sharper 'focused' images.

**Aonghus de Barra,**  
**Ranelagh Ireland**

Dear **Aonghus**,

I do take your point about TVs, but if you pressed me hard I would ALWAYS come down in favor of the monitor, regardless of the situation. (Monitors are available in very large sizes and at very large prices, in fact far MORE expensive than a TV of the same size) Of

course, TRY a TV with SCART, as you suggest, is sound advice. The main problem is the use to which you will put the monitor. For you, with graphics, have found that the LOW QUALITY of a TV is improved when you use a bigger screen. This happens because there are more coloured phosphor dots per line, and so the mixing of the colour is that much better.

If you use a wordprocessor frequently, keeping the screen at a comfortable distance is a big problem with big screens, and needs to be thought about.

A high quality monitor also uses the delta gun system, this was the first type of colour tube that was invented. Modern TVs use in line guns, and you can see this if you look at the tube with a magnifying glass, you will see a Red, Blue and Green stripe of phosphor. Horizontal lines tend to be OK but vertical lines often have a red or blue fringe to them. The delta tubes mix the colours equally well in both directions, but are more complex in their convergence systems.

The other thing to note is that many cheap monitors have the SAME tubes as small TVs. TV tubes are getting very good nowadays, but they do suffer as I have stated above. As you get better specification tubes, they also get smaller and smaller dots or thinner stripes. This improves the resolution, but there is a problem. When the dots are very small, the shadow mask, (a fine wire mesh) also has to have a lot of very small holes in it. This means that you will reach a stage where there is as much mask as there is dots, the effect of this is to cut down the light output and it can make the screen look dusty.

TVs have problems with interlaced displays, they will not take it. A multi-sync monitor and some sort of interlace device is required, and the results are VERY nice indeed.

Finally, if anyone has problems finding leads for almost any TV, it is worth contacting Trilogic (see adverts) they are VERY helpful.



# AMIGA ANSWERS



## Dear AUI

I need backing. My Software Development lecturer repeatedly attacks my native language ie. BASIC, referring to it as, I quote from the top of an assignment (his own words) .

"Many years ago in a dangerous wood lived a deformed, Hobbish language called BASIC which would strike terror into the minds of all right thinking programmers. . ."

He often lapses into such attacks but his major assault is directed towards the dreaded GOTO statement, which inspired the film classics:

Loop Wars.

GOTO Strikes Back.

and the ever popular: Return of the GOSUB.

I agree that BASIC is unstructured and not too hot at file handling but, does it deserve such a pounding? Look at PASCAL, which I am also able to program in, would anybody touch it with a barge-pole? I would rather trade in my AMIGA for a punch-card reader - Damm he's got me at it now, it must be contagious!

Incidentally, I am lapping up the info in your great C++ guide, I have a great love of C (it's good to be multi-lingual), more of the same please but, make sure you have protective gloves and a crucifix handy when handling the dreaded BASIC. Well, WHILE I = sitting in a chair at the computer-sorry I keep lapsing into BASIC- I have a couple of problems:

a) How do you print a file from CLI?

b) Is it possible to pipe the output of a DIR command to a file and if so how?

c) Why are AmigaDOS books so expensive?

Thanks for reading and keep up the good work.

**J.E.Callow**

Dear J.E.Callow,

Statements like that remind me of a quip that one of my lecturers came out with...

"Those who can do, those who can't teach, and those who can't teach, lecture!"

Some people get very irrational about structured programming. What it boils down to is poor teaching in the first place, it is not the language that is unstructured, it is the programmers!

As the power of computers has

increased, it has become possible for a new generation of programmers to become lazy, I do not mean that in a nasty sense, rather, that due to the speed and power of computers it is possible to use high level languages with many built in safeguards, when the only way to get the same performance in the early days was to use machine code. This was full of jumps (GOTOs) and GOSUBs.

BASIC does not deserve the panning, it has introduced millions of people to programming, providing hours of fun, frustration and sleepless nights for its users. However, let's kill the GOTO problem once and for all.

There is one case where the GOTO is the only command that will do the job. That is in the case of error handling. If you program on a large machine and for some reason you get unexpected results, maybe due to an I/O error or something going astray in another part of the system, it is good manners to suspend your program and try to execute some sort of clean up routine. This is very important in multi-user and multi-tasking machines.

In general, GOSUBs can lead to quite messy code, whereas procedures make life much easier. My other opinion is that programs should be flowcharted/pseudo coded BEFORE the program is written, not after as so often happens. That would remove the need for a lot of the jumping about that is done. The coding stage of a software development should be fairly small and mechanical. If you have designed the program correctly you should have no real problems with the code.

PASCAL is just like BASIC, it is a teaching language and was never intended to be anything else. In fact, PASCAL has been superseded by MODULA 2, but you would not think so by the numbers of PASCAL compilers about!

Your questions..

Printing from the CLI and the piping of the dir is handled in exactly the same way, by the redirection operator.

sounds complex... not at all  
copy textfile >PRT:

copy textfile >df0:newfile  
dir >PRT:

dir >df0:dirlist

the chevron > indicates the direction of data flow. The default is to CON: the operator console.

you can also use the copy command to list a file to the printer.

copy from df0:textfile to PRT:

copy from df0:textfile to PAR:  
(raw output without printer driver)

Computer specific books are expensive because of the limited market for them, and maybe because the publishers know they have a captive market.

## Dear AUI,

I have an A500 with one meg of memory and a second disk drive. For a long time I have played games on my Amiga. I realise now how advanced and how much potential the Amiga has. I am 14 years old and have started my GCSEs. Obviously a word processing package and printer would be a great asset but I would like to get into the more serious side of the Amiga and use it to full advantage for my GCSEs. Can you please suggest any packages or ideas for me along these lines. I would be grateful if you could. By the way I think that AUI is a brilliant magazine and I always look forward to it. So thanks for a great read.

**Kai Gibson,**

**Somerset**

Dear Kai,

You have asked one of the most awkward questions possible, so firstly have a look at some of the previous letters, I have made a few comments to other readers.

There are many enhancements that you could buy. It very much depends on your own personal preferences. i.e. I like Scribble! as a W.P. because it is quite simple, and I get on with it very well. I also use Cygnus Ed for programming, and I will buy Protext shortly because I sometimes need the extra power that it offers. I would advise you to look at things in the PD libs, such as Textra just to get the feel for what you need. There are many printers about, but you could do a lot worse than one of the Star range. If you want a some colour, then the LC10C is a very nice printer, packed with features.

Other software.. well, as I have said in a previous letter, try to find a home business pack, that will give you quite a selection of programs, and you will be able to test them out at your own pace. They are not considered to be the best, but many people are happily using them. Once you start to find out

their limitations you will probably know what you want.

Apart from that, there is all the drawing and graphics software, IntroCad by Progressive Peripherals is very good value, and produces some super printouts even on simple printers. Art programs like Photon, Delux etc are all worth looking at.

Lastly, you should consider a hard disk at some stage, probably when you get sick of waiting for your latest masterpiece to load.

## Dear AUI,

I am the proud owner of an Amiga 500 (Kickstart 1.2) and I am intending to buy a 20 meg hard drive. (probably an A590). I understand that the A590 autoboots only from Kickstart 1.3, if this is correct does this mean that I will have to upgrade my Kickstart, or is it possible to purchase a hard drive that operates with Kickstart 1.2? In addition, I would value your opinion on my intended choice of hard drive, is there one that you consider is better/and cheaper? This is probably a really stupid question but I am confused and would appreciate your advice. Oh yes, keep up the good work - a truly excellent magazine.

**Paul Bridgens,**  
**Wiltshire.**

Dear Paul,

Let me answer your last question first, any hard disk consists of two major components. The first is the hard drive and its interface (sometimes called its readers).

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# AMIGA ANSWERS



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**Paul Bridgens,  
Wiltshire.**

**Dear Paul,**

Let me answer your last question first, any hard disk consists of two major components. The first is the hard drive and its interface (sometimes called its controller, but that is often confusing). The second part is the hard disk controller that connects the drive to the Amiga. All hard disks need both in order to work. This is where the confusion starts. The hard disk has the same features as a floppy, but it works faster. So you have to spin the disk, move the heads, read and write data, and quite a few other house keeping functions as well. All of this has to be controlled by the computer. In order to make life easy for the computer several standards have been developed, so that any computer that sends a certain type of command to the disk will know that a particular job will be done. The

function on the controller built into the drive is to present to the computer one of these standard interfaces, and translate the commands into actual hardware operations.

The function of the controller that is connected to the computer is to enable the computer to connect to one of the standards interfaces. It is very much like having the correct plug and socket for the mains, if the computer is fitted with a 5 amp round pin plug, and you have 13 amp square pin sockets it will not fit. What you have to do is make one or the other compatible.

The interface on the A590 is SCSI (Small Computer Systems Interface). This is a good fast interface that can connect to various devices: hard disks, tape streamers etc. Connected to this on the inside is a 20 meg SCSI drive (note that the drive also has the SCSI interface). Some of the A590s had a fairly slow drive, slow in that the access time was a massive 60 thousandths of a second! (you can get drives with access times in the region of 20 thousandths of a second). For the normal run of the mill work, you are unlikely to need a fast drive. However, 20 megs is considered these days to be fairly small, so you might like to bear that in mind, it is possible to fit much larger drives into the A590, but at a price.

There are quite a few hard drives available for the A500, but I have no reservations about the A590 at all. Just to give you some idea, I have the A2091 (the A2000 version of the A590) and connected externally to that is a Seagate 80 meg, I also have on a different machine a Supradrive, and apart from the slow startup time of the Seagate drives (some Seagate drives do a lot of self tests when they are first powered up) I notice very little difference between the drives.

All of my drives are autobooting, but I did run for quite some time the old A2090 and Kickstart 1.2. You do NOT need to have an autobooting system in order to use the A590. What you do is set up a special Workbench disk that mounts the hard disk as soon as possible and then transfers over to it. I would recommend that you upgrade to 1.3 if possible. This will save a lot of bother, and you will be able to use the fast file system on the hard disk. I used to use WB 1.3

and Kickstart 1.2. My startup sequence looked like this:

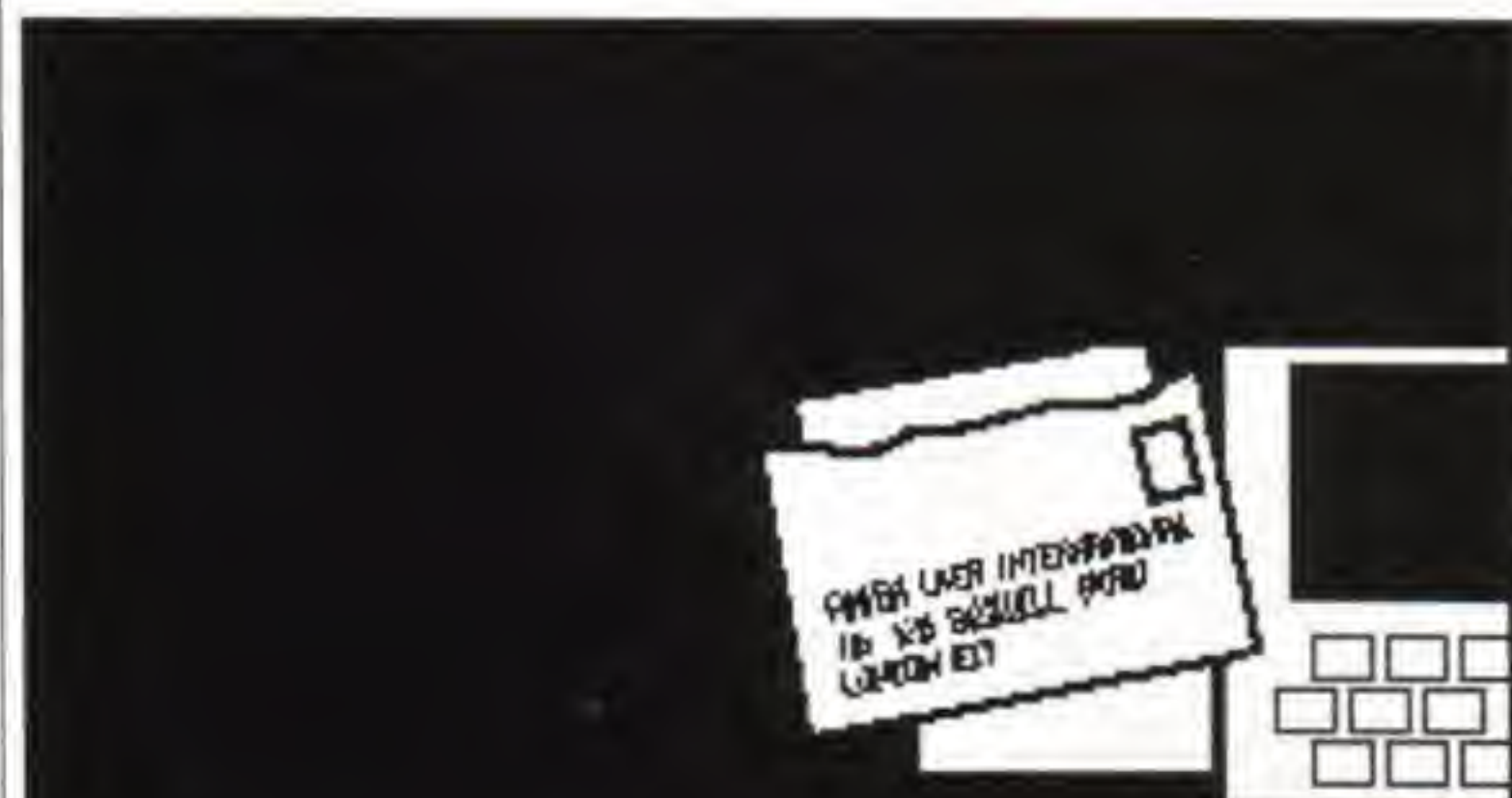
```
;
setpatch
FastMemFirst
failat 25
binddrivers
mount newcon:
mount spock:
mount kirk:
mount sulu:
mount scotty:
failat 11
cd spock:
cd kirk:
cd sulu:
```

cd scotty:

```
execute sulu:pridisk /s /startup-
sequence
```

```
loadwb delay
endcli > nil;
```

I had four partitions, named Spock:, Kirk:, Sulu: and Scotty: (yes I'm still a trekkie!). You need to mount the devices, by setting up a mountlist entry, the cd ensures that each device shows up as a disk icon, and then I jump the the main startup sequence in Sulu:. But as I said, upgrade if possible, as it saves a lot of bother.



Have you got handy hints'n'tips which can be passed on to other Amiga users? We always welcome them. Send in your submissions - we will be offering prizes to every reader's tip published. Please address your submission to:

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Hobbyte	44	Virus Free	74
		Westoning Ltd	128



## £50 STAR LETTER £50

Dear AUI,

Living as I do on the Southern edge of Europe, I can buy American Amiga magazines, and I find that American software prices are significantly lower than their British equivalents.

In many cases it appears that the British retail price is arrived at simply substituting the \$-sign for the £-sign!

I have noticed in your review pages that some programs use PAL format, and some the American NTSC display format. Evidently the NTSC software gives a reduced screen display area. Are there other problems associated with running NTSC software? Is it difficult to convert NTSC originated software to PAL format? If so, is this given as a motive for higher prices? I also found some PAL format software is available in the U.S., and I give the following examples of the surprising difference in price for what is identical software:

TITLE	U.S. \$-Price/£-Equiv	U.K. Price
DigiView Gold (PAL)	\$145/£75.92	£149.95
DigiPaint 3 (PAL)	\$58.95/£30.92	£52.90
Pen Pal (PAL!)	\$99.95/£52.33	£79.95
D Professional (PAL)	\$309.95/£162.26	£299.99
AudioMaster 3 (NTSC)	\$64.95/£34	£54.95
£20.95		

Prices converted at \$1.91 to £1

Since all of the above except Audiomaster 3 are PAL versions, why do the British versions cost so much more? Remember that both are retail prices, so the American suppliers are making their desired profit at almost half the price. Are the British software distributors ripping us off?

Obviously it seems best for me to buy my software by U.S. Mail Order rather than U.K. mail order, but I would like to know if the NTSC versions of Graphics, Music, and even games software would run happily on a PAL system?

Your magazine is excellent: a much better balance between utility and leisure software and applications than your rivals.

Steven Holden,  
Spain.

Dear Steven,

The only real difference should be that of screen size - many Americans are envious of the PAL system and so many video and graphics applications are available on PAL. The difference in prices is disturbing and have been like that for many products outside computing - take cars for instance. However, one major factor for software imported into the UK is the cost of transport, customs, handling, etc. which does push up prices, especially for U.S. software/hardware. The supposedly "reduced" UK market also seems to increase prices due to the marketing idea of low volume sales ratio which, of course, has precisely the effect of keeping prices high and sales low.

AUI is an international magazine (it sells very well outside of the UK) and so the product information lists the US contact address when appropriate. Most UK distributors are given "evaluation" copies of products to send out to UK magazines, and sadly a few do not - they sell them! AUI receives many products from the United States, and so gives credit to the company that supplies them. UK buyers, like overseas buyers, if using an international credit card will find that they can get better buys from the US, the postage and import duty is minute compared with the savings to be had.

An editor of another UK Amiga publication, recently made a dig at AUI (although he didn't actually name us) for not listing the UK addresses of products that we review. All that we can say is that our readers are sophisticated enough to realise we are an international magazine and will publish the address from where the product originates - UK, USA, Germany, etc.. AUI has known the Amiga-scene for much longer than any other Amiga magazine, and we were offering guidance to early Amiga owners when many others currently giving advice were still playing games on their Spectrums.

Dear AUI,

In Newsfile, January 1991, page 16 and 18 there are two identical news items about Pre-Formatted Diskettes, one in a vertical column (page 16), the other in a horizontal setting (page 18). Wouldn't it be better to keep one for the next issue?

M.Reza Molavi,  
IRAN

Dear M.Reza,

As a test we thought we would re-print a news article twice to find out how many people would notice. You were the only reader to point it out! Well done!

Dear AUI,

Your magazine has been my favourite Amiga magazine since the first time I bought it back in Jan90. I have greatly enjoyed every aspect of it, from the layout to the reviews. I must congratulate Antony Jacobson, Tony Horgan, and Pat Kelly on the great achievements that AUI has made so far. An achievement which many others have failed to accomplish. The professional reviews cover almost all aspects of today's Amiga computing, along with Newsfile which brings new inventions in the world of computing to light. I enjoy reading all of the magazines articles. Full marks and congratulations also to all of the contributors - Alan, Andy E, Andy M, Anthony, Barry, Bob, Bud, Daphne, David, Erik, Jonathan, John K, John W, Martin, Mike, Norman, Paul, Peter and all other contributors. One of the most interesting aspects of AUI must be the layout, every page with a border and an icon on the top-left of the page pointing out the section to which the article belongs - another good feature. Well done to Graham. Mention must also go to Liz, Richard, and Tony for the mar-

vellous advertising which contains some real bargains (Especially for the advertisers...Ed.). And as for Ray Lewis and Peter Welham, need I say more (I wouldn't if I were you...Ed.). Believe me when I say that I envy all of you for putting together such an entertaining, knowledgeable and all together superb package. As for me I am still a student and study maths, eventually hoping to become a Hardware Engineer one day. Thank you, and keep up the hard work.

Kambiz Memarzia,  
Leeds

Dear Kambiz,

You weren't joking when you said HARD work, if you were to spend a day at the AUI offices you wouldn't be so envious, or so congratulatory to our.

AUI is now bigger both in size and in content and as such takes up even more time to put together and any thanks we can get are really appreciated.

Although the old design had its many followers we felt, along with other readers that it was time for a change - it had been the same for several years!

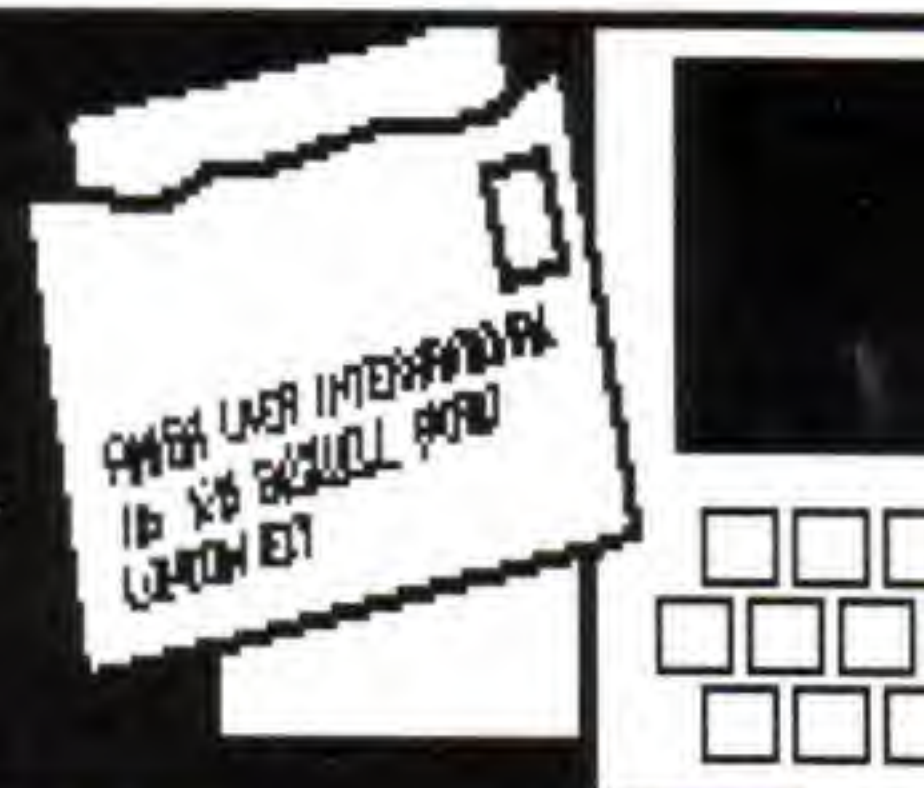
We differ from other Amiga magazines because our contributors are hand-picked professionals and work not just for money, but because they enjoy investigating the possibilities of the Amiga in their chosen disciplines. They most certainly can be considered the most qualified in the country to review products, or write the articles of general or specific Amiga interest. Our job is to interest, entertain, and help you master the Amiga to your satisfaction. Thank you again for telling us we do it quite well.

Dear AUI,

Not being able to "work" on my

## WRITE TO REPLY

This is where you get your chance to speak - or write - your mind about what's bugging you - or your computer. Bud Vennos fields the bouquets and the brickbats.





# AMIGA LETTERS

Amiga 2000 (while in the Saudi Arabian deserts) I've taken to reading any and all magazines I can get my hands on. **AUI** has left a lasting Impression. You could teach Amiga World (and other Amiga-specific American magazines) a bit about how to write and rate a piece of software. Can I have information on subscribing to your magazine.

**Alex G. Santa-Pinter,**  
CAPT, USAF.  
Choctaw, USA

Dear Alex,

We sent lots of **AUI**s to the Gulf because we new that there would be many servicemen out there without a great deal to do during the war! We have had lots of response from grateful recipients. As for subscribing, our Subs Dept. will send you the necessary information.

Dear **AUI**,

I am not yet an Amiga owner although I aim to be in the near future. My difficulty is in the choice of models - between the A500 and the Amiga 1500. Which at present is the best value for money considering the bundles? How compatible are the Amiga 1500 and A500 with software i.e. games, etc? Which of the following monitors is the better - the CBM 1084S, and the Philips CM8833 Mk.2? Do they both work equally well with the A500 and Amiga 1500? I hope that you can answer these questions.

**Mark Williams,**  
Kent

Dear Mark,

We normally answer these questions in the Amiga Answers section, but there are a lot in that section already this month so I'll answer your questions.

The A500 is the better value if you mainly want to play games and run wordprocessors etc., but the Amiga 1500 is the better buy if you envisage that you'll need hard drives, modems, 24-bit colour graphics cards, extra memory, and lots of other additions. The main differences between them are that the Amiga 1500 is designed for expansion boards (up to eight internal) while the A500 has only one full expansion bus and that the A500 can connect to a standard TV - the Amiga 1500 can not.

A harddrive, and up to 8 Megs of extra memory can be added to

the A500 through its expansion bus. This is because most units which are designed to connect to the bus have a throughport, which allows other expansions to be plugged into others.

Some games software will not run properly on the Amiga 1500 due to its different keyboard configuration - a fault of the programmers - however, most do work. Recent non-starters at the **AUI** offices were Robocop 2, Chip's Challenge, and Chase HQ 2. Of the monitors, both are made by Philips and the CM8833 Mk.II is the latest design featuring a flatter screen. Both are have stereo audio outputs and there should be no connection problems if you make sure you have the correct cable.

Dear **AUI**,

I have a complaint regarding your issue 'Volume 4 Number 6'. On page 32 you gave a review of a joystick/mouse adaptor called 'MouseMaster' by Practical Solutions. I am forever plugging and unplugging my joystick or mouse so this item appeared to be just what I needed to avoid damage to the ports. Unfortunately, after searching through umpteen magazines and ringing umpteen different major dealers I have not been able to trace one. In fact, nobody has heard of it, or Practical Solutions, and when I describe it to them they do not appear to believe that such an item exists. In my desperation I rang your editorial department. They could not tell me where I could buy one and, worse still, could not tell me a contact address or number for Practical Solutions!

This raises the question, where on earth did Bill Hardwick get his MouseMaster to test? Please can anyone tell me where can I buy a Mousemaster or even where do Practical Solutions hide out? If not, why are you wasting space in your magazine reviewing items the public can't get hold of?

P.S. I am aware that Trilogic do a cheaper version with 2 ports.

**L.M. Devey,**  
Birmingham

Dear Mr. Devey,

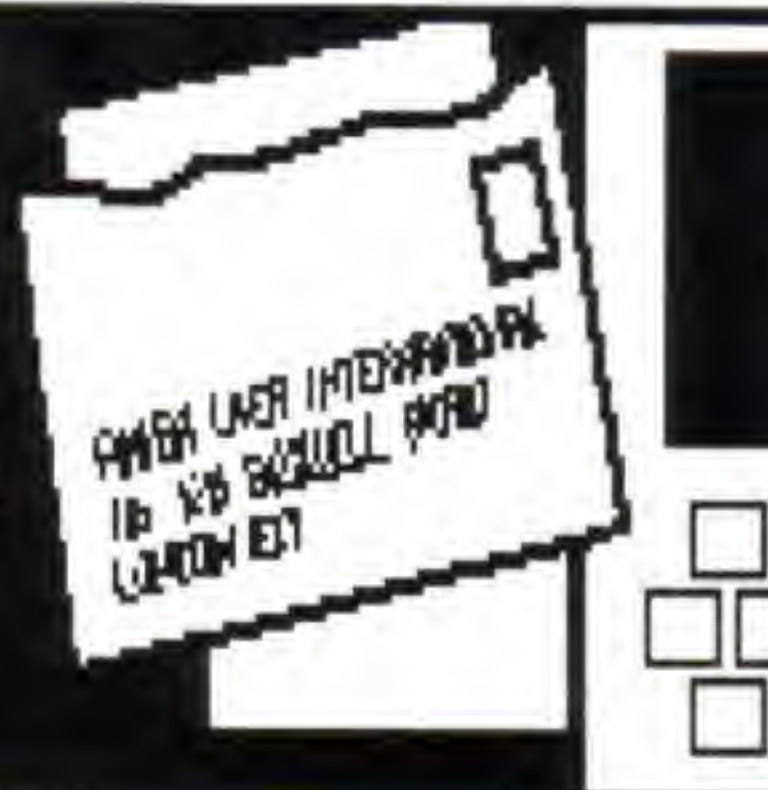
Since running the article we have since moved offices and - you've guessed it - unfortunately lost any information we have on

Bill Hardwick and his MouseMaster. But the MouseMaster does exist, I've seen it! I think that it was mainly produced for the ST because the mouse ports were so inaccessible, but it was popular with many Amiga users. Producing magazines is often a very pressured business which does not leave

time for proper answering of phone queries. We cannot guarantee that any telephone caller will get full information, so it is therefore best to write in and we can deal with your requests more thoroughly. If Bill Hardwick or any reader can submit any details to us about the MouseMaster at **AUI** we will pass them on.

## WRITE TO REPLY

*This is where you get your chance to speak - or write - your mind about what's bugging you - or your computer. Bud Vennos fields the bouquets and the brickbats.*



## COMPETITION WINNERS MEGA MUSIC COMPO COMPETITION WINNERS

In **AUI** February we had a special music supplement and a MEGA MUSIC COMPO. Here are the winners....But first the answers:

- 1) Musical Instrument Digital Interface (MIDI)
- 2) Paul Overaa
- 3) a. Frequency (pitch)  
b. Amplitude (loudness)

The MASTERSOUND Sampler has been won by **Stewart Wilson, Wiltshire**.  
AudioMaster III by **Paul Hammond, Middlesex**,  
and Deluxe Music Construction Set by **William MacTear, Isle of Lewis**.

Prizes will reach you shortly.

## WATCH THIS SPACE ... NEXT MONTH ...

*for the draws for Graphics Compo, Virgin Games Compo, and the Citizen 124D compos.*



# THE COMPLETE COLOUR SOLUTION

£179

Vidi ... No 1 in UK & Europe (Leading the way forward)



Get the most out of your Amiga by adding:

## "The Complete Colour Solution"

The Worlds ultimate creative leisure product for your Amiga. Capture dynamic high resolution images into your Amiga in less than one second.

### And Look No Filters

Images can now be grabbed from either colour video camera, home VCR or in fact any still video source. The traditional method of holding three colour filters in front of your video camera is certainly a thing of the past. Because Vidi splits the RGB colours electronically there are no focussing or movement problems experienced by some of our slower competitors. Lighting is also less of an issue as light is not being shut out by lens filters. Put all this together with an already proven Vidi-Amiga/VidiChrome combination and achieve what is probably the most constant and accurate high quality 4096 colour images ever seen on the Amiga.

The colour solution is fully compatible with all Amiga's from a standard A500 to the ultimate A3000. No additional RAM is required to get up and running.

You will see from independant review comments that we are undoubtedly their first choice and that was before the complete solution was launched. If you have just purchased your Amiga and are not sure what to buy next, then just read the comments or send for full review and demo disk.



\*Actual unretouched digitised screenshot\*

## Features ...

- Grab mono images from any video source
- Capture colour images from any still video source.
- Digitise up to 16 mono frames on a 1meg Amiga.
- Animate 16 shade images at different speeds.
- Create windows in both mono & colour.
- Cut & Paste areas from one frame to another.
- Hardware and software brightness & contrast control.
- Choice of capture resolutions standard & Dynamic interlace.
- Full Palette control.
- Add text or draw within art package.

**Amiga Computer** The best Amiga digitiser has had the technicolour treatment. Vidi must be one of the most exciting peripherals you can buy for your Amiga.

**Video Magazine** When I first saw Vidi "in the flesh" as it were, at the CES show last September it looked to be the answer to a frustrated Digi View owner's dreams - in fact to see pictures appearing on screen without the customary two minutes wait seemed almost too good to be true. I have consistently produced more good quality pictures in the short time I have had Vidi than I ever did with Digiview.

**Zero** Now under normal circumstances cheap usually means poor quality but this is not the case with Rombo. Why? cos Vidi-Amiga is the best digitiser for under £500 and I've tried them all.

**Amiga Format** Where quality is concerned, Vidi produces some of the best results I've seen on any digitiser at any price.

**Amiga User International** The latest addition to the Rombo kit is called Vidi-RGB and brings this already impressive package to the realms of totally amazing. **CONCLUSION:** Who will find Vidi-Amiga useful? The answer to this is almost anyone with a video recorder or camera and a passing interest in graphics.



\*\*Full colour demonstration disk available for only £1.95 to cover P&P\*\*

6 Fairbairn Road, Livingston, EH54 8TS Tel: 0506-414631 Fax: 0506-414634

ROMBO  
Limited



# Just The Facts:

## What Makes Digi-Paint 3 the Ultimate Paint Program?



*"Finding the best paint program for your Amiga can be confusing, but once you have the facts it's simple."*

Laura Longfellow  
Sales Manager  
NewTek Inc.

### "Why is Digi-Paint 3 better than DeluxePaint III™?"

Digi-Paint 3 works in the Amiga's powerful Hold And Modify (HAM) mode, which allows you to paint using all 4096 colors simultaneously. By comparison, Deluxe Paint III (by Electronic Arts) operates in less sophisticated modes, restricting you to a maximum of only 64 colors. Advanced features available in Digi-Paint 3—including Colorizing, Variable Transparency, Shading, Lighten, Darken and Range Painting—are simply not possible in Deluxe Paint III due to its 64 color limitation. AMIGAWORLD warns, "Competitors may want to head back to the drawing board, because Digi-Paint 3 is hard to beat!"



### "What makes Digi-Paint 3 better than other HAM paint programs?"

Digi-Paint 3 is the only Amiga paint program written in 100% assembly language. Although challenging to program (taking up to 10 times longer than other computer languages), it's the only way to achieve the incredible speed found in Digi-Paint 3. AMIGAWORLD calls it "the fastest HAM paint program yet" and AMIGA SENTRY estimates it's, "6-10 times faster" than the nearest contender.

Other advanced features found *only* in Digi-Paint 3 include: anti-aliased texture mapping, anti-aliased fonts, ARexx support, 1024 x 1024 super bitmaps with auto-scrolling and dithering to 30 bits per pixel (over a billion colors internally, giving you tens of thousands of apparent colors). COMPUTER SHOPPER magazine reports "Digi-Paint 3 is without a doubt the most advanced HAM paint program to date!"



### "But is Digi-Paint 3 easy to use?"

I've learned that no matter how powerful a program is, if it's not friendly it's not worth my time. We designed Digi-Paint 3 with all users in mind—from the beginner just starting out with computers, to the "power user" who demands the most advanced features possible. The spiral-bound manual contains a step-by-step Guided Tour, 11 hands-on tutorials, a color coded reference card, and almost one hundred example photos.

Digi-Paint 3's intuitive user interface was created by Digi-View designer (and NewTek Founder) Tim Jenison and renowned Amiga artist Jim Sachs. It features innovative "Dashboard" controls which AMIGAWORLD regards as "a joy to use" and "very easy to learn and understand". INFO MAGAZINE says the new interface "looks great and works logically".



### "What is the Transfer 24 program included with Digi-Paint 3?"

Transfer 24 is a separate program disk included in the Digi-Paint 3 package, allowing you to alter any picture's brightness, color saturation, contrast, hue and sharpness, almost as easily as adjusting the controls on your television set. Transfer 24 also lets you modify the size, palette, and resolution of any picture. These powerful features, known as "Image Processing", give you incredible control over your final artwork. You can also save your image in any of the Amiga's 24 resolution modes (up to 768x480) making it compatible with all Amiga graphics software. AX MAGAZINE notes that "Transfer 24 gives you even more options as to the final appearance of your work". AMIGAWORLD declares, "Transfer 24 is great for making overall changes."

For a NewTek authorised dealer near you contact  
**HB Marketing Ltd.**  
at 0753 686000.

Digi-Paint 3, Digi-View, and Transfer 24 are trademarks of NewTek Inc.  
DeluxePaint III is a trademark of Electronic Arts.  
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